Communications Equipment Catalog

HAM RADIO OUTLET

WORLDWIDE DISTRIBUTION

Serving You From Twelve Locations

Summer 2005

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Extend your operating horizon with YAESU's SO2R capable FTDX 9000!

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Choice of the World's top DX'ers℠

NEW IC-756PROIII

HF/50MHz TRANSCEIVER
ICOM IC-756PROIII
POWER
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PHONES
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F-1 F-2 F-3 F-4 F-5
SSB CW/RTTY AM/FM FILTER EXIT/SET
MIC GAIN RF POWER COMP BK-IN DELAY KEY SPEED
TWIN PBT

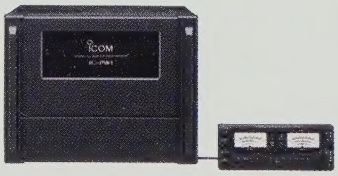
OVER 500,000 SUCCESSFUL Q'S & COUNTING
756PRO SERIES

PORTABLE BIG GUN

The DX radio of choice. The success of the '756PRO Series incorporating '7800 breakthrough features.

The 756PRO series is legendary in DX circles – big enough in features to be the best in its field, but compact enough to fit in a Pelican® case and ship anywhere in the world. The first DX rig with 32-bit floating point IF-DSP. The first amateur rig with a large, TFT color LCD. The 756PROIII continues the legacy, advancing receiver performance with a +30dBm third order intercept (TOI) point and, to maximize sensitivity while minimizing distortion, 2 new 7800-style preamplifiers. See why '756PRO series rigs travel to all the hot spots. Visit your favorite HRO location today.

'756PROIII Specifications: • **TX**: HF + 6M • 100W, Continually Adjustable Down to 5W • Adjustable SSB TX Bandwidth • Digital Voice Recorder • Auto Antenna Tuner • **RX**: 30 kHz to 60 MHz • Quiet, Triple-Conversion Receiver • 32 Bit IF-DSP with 24-bit A/D D/A Converters • 64 MHz Roofing Filter • 5" TFT Color LCD • 8 Channel RTTY TX Memory • Digital Twin Passband Tuning • Auto or Manual-Adjust Notch with 70 dB Attenuation • 13.4" W x 4.4" H x 11.2" D • 21.1 lb • And Much More



IC-PW1

Give your station 1 kilowatt of power!
Get stable, clean and low distortion 1 kW from 1.8 MHz to 50 MHz. Full duty cycle and full break-in operation are possible. Great for DX'Peditions or contest operation.

Wide ALC adjustable range.
Internal circuitry allows the ALC to be adjusted over a wide range. This means the IC-PW1 can be used with almost any HF, 6M or HF/6M rigs - not only Icom rigs!*

Compact body.
Small size - only 13.8 (W), 10.6 (H), 15.0 (D) in. (approx.) And, because the controller is detachable, the IC-PW1 can be installed almost anywhere.

Heard it. Worked it. Logged it! x3

ICOM®

AMATEUR | AVIONICS | LAND MOBILE | MARINE | RECEIVER | SYSTEMS WWW.ICOMAMERICA.COM

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AMATEUR RADIOS

PRYME *Radio Products* **ADI** *Radios*

Mobile

2 Meters

AR-147 PLUS

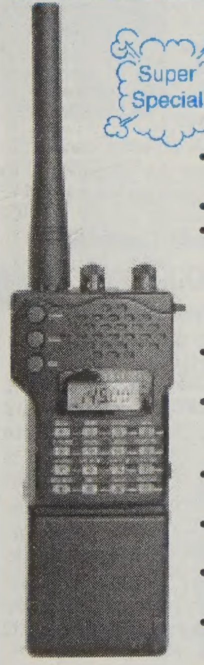
$149.95

HRO Price

Our most advanced radio has all the features expected in a modern mobile transceiver including AM air receive,direct frequency entry, and 81 memory channels. Includes both CTCSS and digital coded sqelch.

- Extended receive capabilities 118 - 171 MHz.
- Three power settings, 60, 10, and 5 watts.
- 80 memory channels plus a call channel.
- CTCSS / DCS encode and decode built-in.
- Auto repeat offset.
- 9 DTMF AutoDial memories plus built-in redialer for autopatch.
- Dual frequency watch.
- User programable time out timer.
- Programable band and memory scan modes.
- DTMF paging.
- Direct frequency entry using the multifunction DTMF microphone.
- Auto power off.
- Frequency or channel display.
- PC programable with option software.

Handheld



Super Special

2 Meters

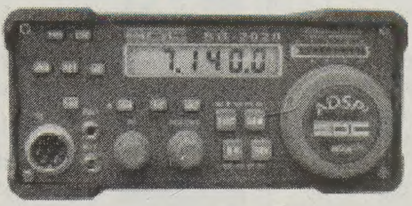
AT-201-HP

HRO Price – Call

- The AT-201 transmits 144-148 MHz; receives 130-179 MHz.
- Backlit key pad.
- 40 memories are softsectored as 20 memories in each of 2 banks. Memories store any transmit offset and CTCSS tone.
- Memory group covers groups of 10 or 40 memories.
- Automatic repeater for quick operation. Enter the desired frequency and + or -.
- Full range or 1 MHz scanning is available.
- Display shows either channel or frequency.
- Can be cloned using a hardware key.
- Compatible with all AT-200 / 400 accessories.

HF Transceiver

SGC



SG-2020 ADSP²

$795.95

HRO Discount Price

This is the ultimate portable transceiver you want for base, backpack or business trips. Operate SSB or CW from wherever you are. The SG-2020 draws only 400mA receive and less than 3 Amps when transmitting at 20 Watts. Output power is adjustable for 0 – 20W PEP. VOGAD baseband RF speech processing and RF clipping provide plenty of talk-power. No confusing menus and two-step operation: select your frequency and transmit. Available with fully integrated ADSP2 for superior sound clarity, the SG-2020 is pure, simple HF at its best.

- Transceiver: 1.8 – 29.7 MHz.
- 0 – 20 Watts PEP.
- <0.8 mA receive.
- <3 A transmitting current.
- Built-in iambic B keyer 5 – 50 wpm.
- 7.3 L x 6.2 W x 2.8 H; 4.4 lbs.
- ADSP2: 13 dB and 26 dB noise reduction.
- 100, 500 and 1500 Hz bandpass filters.

HF Receiver

JRC

NRD-545

$1799.95

HRO Price

The NRD-545 HF receiver provides clear, distortion free sound through the application of 40-bit digital signal processing (DSP). 13 types of circuits are handled by the DSP unit including all mode detection, IF filter, pass band shift, noise reduction, beat canceller, noise blanker, notch filter, AGC, BFO, RF Gain, squelch, tone control and s-meter. Features a variable tuning system, high sensitivity, wide dynamic range RTTY demodulation, large LCD display, remote control by a personal computer. The NRD-545 covers .01 to 30 MHz and 30 MHz to 200 MHz with the optional board. Covers all modes with outstanding sensitivity.

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ALINCO® RECEIVERS / HANDHELDS

Receivers

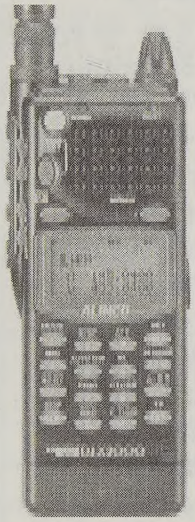
DJ-X3TD

$CALL

HRO Discount Price

Revolutionary design. Receives 100 kHz to 1.3 GHz, AM, NFM and WFM. It has a dry cell battery pack, four scan modes, stereo FM reception (with optional headphones).

- Receives 0.1 to 1299.995 MHz (cellular excluded)
- 700 memories.
- Power: 3.6 to 6 VDC.
- Antenna Z: 50Ω.
- Sensitivity: < 12dB.
- Height: 4.01 in.
- Width: 2.2 in.
- Depth: 0.9 in.
- Current Drain: approx. 75 mA maximum.



World's Most Advanced Multimode Handheld Receiver

DJ-X2000T

$449.95

HRO Discount Price

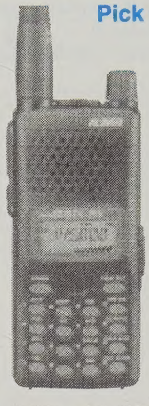
- CTCSS decoder / tone scan.
- WFM, NFM, AM, USB, LSB CW.
- Covers 100 KHz - 2150 MHz (cellular blocked).
- Help navigation.
- 2000 channels in 50 banks, 40 per bank.
- PC Programmable.

Mobile Accessories

Model	Item	DR-130T 430T M06TH M03	DR-135T 235T 435T	DR-135 MkII	DR-435 MkII	DR-620T	HRO Price
EDS-9	Remote Kit					*	$45.95
EJ-19U	Memory Expansion	*					$24.95
EJ-20U	Tone Squelch	*		*	*		$33.95
EJ-40U	Digital voice board		*				$119.95
EJ-47U	Digital voice board			*	*	*	$169.95
EJ-41U	TNC unit		*				$129.95
EJ-50U	TNC unit					*	$119.95
PC-15B	Power Cord	*	*	*	*		$10.95
MB-130	Mounting Bracket	*		*	*		$19.95

Single Band

Pick a Band – Any Band



DJ-196T

2 m – $149.95

DJ-296T

222 MHz – $189.95

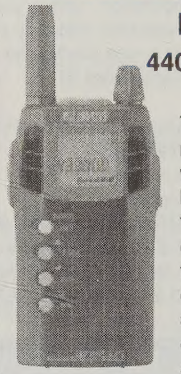
DJ-496T

440 MHz – $199.95

HRO Prices

These HT's feature alphanumeric display, back-lit keypads, 5W out with standard EBP-48N battery, CTCSS encode/decode, DCS and 4 different tone bursts, theft alarm. The 2m and 440 MHz versions have 41 memories; the 222 MHz model has 160 memories plus call channel.

Second Generation Pocket-Size UHF Transceiver



DJ-S40TD

440 MHz – $89.95

HRO Price

This pager sized rig transmits up to 1 watt output with the optional Ni-MH battery (EBP-53N) or external DC power. Normal output is 500 mW. It features 100 memories, a call channel and several scan modes. It covers the entire US Amateur Radio allocation of 420-450 MHz with an extended receive range. The case design conceals the speaker. The antenna has SMA fitting. 38 CTCSS encode and decode tones are standard features plus four tone bursts. A popular application is its use through cross-band transceivers as a "remote mike" through a base or mobile dual-band transceiver.

DJ-S11T

2m - $149.95

Suggested List Price

Special!! $79.95 Each

Use this tiny 2m communicator from your car with the optional EDH-18.

- Transceive on 144-148 MHz.
- 20 memories plus call channel hold frequency, 50 CTCSS tones and offset.
- Pivoting antenna.
- Smaller than 5" H x 2.25" W.
- Use 3 AA or NiCad pack.
- Power out is 340 mW.
- Large lighted display.

Dual-band

HRO Discount Price $229.95

DJ-596TMKII

2m / 440 MHz

VHF + UHF operations from a high output, easily operated HT. Features an enhanced TXCO allowing for ± 2.3ppm frequency stability. Has a NiMH battery, 100 memories, CTCSS + DCS encode and decode. Optional digital voice communications if you add the board. Alphanumeric channel labels, keyboard frequency input, theft alarm, backlit keys and display, scan modes, narrow FM mode and more! CAP compliant (application pending).

DJ-V5TH

2m / 440 MHz

$209.95

HRO Discount Price

This compact HT has 200 memories, alphanumeric display, direct frequency input, narrow / wide FM RX, CTCSS encode / decode, 5 scan modes, auto-dialer, and an SMA antenna connector. The receiver can be expanded to 76~999.995 MHz (cellular blocked).

Credit Card Size

DJ-C7T

NEW!

2m / 440 MHz

$199.95 – HRO Price

Enjoy this compact 2m/440 MHz dual band with standard or non-standard splits, AM air band receive, CTCSS encode / decode, 200 memories, volume/squelch control, key lock, auto-power OFF, Mic/Earphone/DC jack.

ACCESSORIES

Handheld Accessories

MODEL	DESCRIPTION	C5	C7	X2	F1T F1T-HP	G1T	G5	S40	S11 S41	V5	X2000 X10	162 TD	162T	180T 280T 480T	190 191T 191T-HP	195T 196T 496T	560 TA	580T	596	HRO Price
EBC-6	Mobile Bracket			*	*	*	*		*	*	*	*	*	*	*	*	*	*		$16.95
EBP-24N	Ni-Cd Battery (7.2V 1200 mAh)													*			*	*		$78.95
EBP-26N	Ni-Cd Battery (7.2V 700 mAh)													std			*	*		$41.95
EBP-28N	Ni-Cd Battery (12V 700 mAh)													*			*	*		$68.95
EBP-33N	Ni-Cd Battery (4.8V 650 mAh)						*				*				*					$63.95
EBP-34N	Ni-Cd Battery (4.8V 1200 mAh)						*				*				*					$69.95
EBP-36N	Ni-Cd Battery (9.6V 650 mAh)						*								*					$67.95
EBP-37N	Ni-Cd Battery (4.8V 700 mAh)						*								*					$34.95
EBP-45N	Ni-Cd Battery (6.0V 700 mAh)									*										$47.95
EBP-46N	Ni-Cd Battery (9.6V 600 mAh)									*						*				$59.95
EBP-51N	Ni-MH															*			*	$37.95
EBP-50N	High Capacity															*			*	$23.95
EBP-52N	Ni-MH Battery (3.6V 500 mAh)							*												$37.95
EBP-53N	Ni-MH Battery 6.0V 500 mAh)							*												$45.95
EBP-54N	Ni-MH Battery (3.6V 1500 mAh)							*												$49.95
EBP-58N	Ni-MH Battery (3.7V)		*																	$37.95
EDC-16B	Filtered DC Cig. Cable	*		*	*	*	*			*	*	*	*	*	*	*	*	*		$22.95
EDC-36	Filtered DC Cig. Cable	*		*	*	*	*			*	*	*	*	*	*	*	*	*		$24.95
EDC-37	13.8 volt Power Cable	*		*	*	*				*					*	*		*		$7.95
EDC-43	Cigarette Lighter Cable	*		*	*	*	*			*	*	*	*	*	*	*	*	*		$10.95
EDC-45	Quick Charger			*	*							*	*	*			*	*		$69.95
EDC-49	Wall Charger													*			*	*		$19.95
EDC-60	Rapid Charger						*				*				*					$78.95
EDC-63	Wall Charger						*				*				*					$19.95
EDC-88	Quick Charger EBP-33N, 34N,35N,36N, 37N,48N						*				*				*	*				$53.95
EDC-91	Quick Charger EBP-45N, 46N									*										$53.95
EDC-93	Wall Charger									*										$23.95
EDH-11	Dry Cell Case													*			*	*		$12.95
EDH-12	DC Jack Adaptor for ext. power													*						$12.95
EDH-16	Dry Cell Case						*				*				*					$12.95
EDH-27	Dry Cell Case / Charger			*																$44.95
EDH-28	DC Converter Cigar Cable			*																$38.95
EDH-29	Dry Cell Case									*										$12.95
EDH-31	Dry Cell Case							*												$12.95
EDH-32	Cigarette Lighter Cable		*																	$19.95
EDS-7	2 Pin Mike Adapter	*																		$9.95
EJ-14U	50 Memory Channel Unit													*						$19.95
EJ-15U	200 Memory Channel Unit													*						$29.95
EJ-28U	CTCSS Decoder Unit														*					$42.95
EJ-43U	Digital Voice Board																		*	$109.95
EME-12	Headset w/ear hook VOX & PTT			*	*	*	*		*	*				*	*	*	*	*		$69.95
EME-16	Tie Pin Microphone	*		*	*	*	*		*	*		*	*	*	*	*	*	*		$17.95
EME-17	Earplug Headset	*		*	*	*	*		*	*		*	*	*	*	*	*	*		$29.95
EME-18	Earphone	*	*																	$13.95
EME-24	Earphone/Microphone		*																	$39.95
EME-25	Curl Cord earphone		*																	$14.95
EMS-47	Speaker Mike (req EDS-7)	*		*	*	*	*		*	*				*	*	*	*	*		$24.95
EMS-50	Round Speaker Mic	*																		$63.95
EMS-60	Speaker Microphone		*																	$41.95
EMS-8Z	Speaker Microphone			*	*	*	*		*	*		*	*	*	*	*	*	*		$48.95
ESC-18	Leatherette Case EBP-24N													*						$13.95
ESC-19	Leatherette Case EBP-28N													*						$18.95
ESC-23	Soft Case (EBP-30N)					*														$16.95
ESC-24	Soft Case (EBP-31N/32N)					*														$10.95
ESC-27	Soft Case								*											$15.95
ESC-28	Soft Case (EBP-37N)						*				*				*					$12.95
ESC-29	Soft Case (EBP-33N)						*				*				*					$12.95
ESC-30	Soft Case (EBP-34N/35N/36N)						*				*				*					$12.95
ESC-34	Soft Case / Belt Pouch	*		*																$13.95
ESC-35	Soft Case black									*										$12.95
ESC-36	Soft Case black															*				$12.95
ESC-38	Soft Case black		*																	$14.95

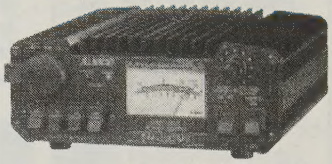
Digital Voice Modulation

Be among the first amateur operators to communicate via digital voice modulation using the publicly-open ITU-TV.32 protocol. Experiment with digital voice modes. The radio is easily switched between analog and digital modes. HT and mobile boards are on-air compatible with each other.

Available boards:

EJ-40U Digital Voice Board
for DR-135/235/435 mobiles.
EJ-43U Digital Voice Board
for DJ-596 HT.

Accessories



DM-330MVT Communications Grade Switching Power Supply

Super compact, lightweight power supply is great for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Convenient front panel connections. Internal switch to convert voltage to 220V. Cigarette plug socket. **HRO Price $149.95**

EDX-2 Automatic Tuner

Mates with DX-70/77 radios. Tunes wire antenna 8-80 feet. Use for base, mobile, or marine installations. **HRO Price $299.95**

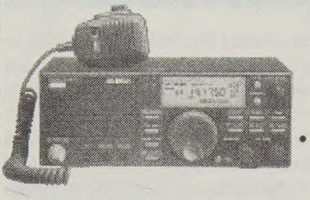
Alinco Handheld Specifications

Model	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out **	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DJ-C7T	2m / 440 MHz		320 mA	70 mA	300 mW *	200	50	2k	<.15 µV	3.7	2.2	0.57	
DJ-596	2m / 440 MHz	6-16VDC	1.5 A	75 mA	5 W †	100	50	3k	<.15 µV	4.89	2.2	1.58	0.62
DJ-V5T	2m / 440 MHz	13.8 VDC	1.6 A	220 mA	5 W	200	50	2k	<.16 µV	3.81	2.28	1.59	0.74
DJ-196T	2 m	13.8 VDC	1.2 A	280 mA	5 W	40	50	2k	<.14 µV	4.88	2.25	1.57	0.83
DJ-296T	222-225 MHz	13.8 VDC	1.2 A	280 mA	5 W	160	50	2k	<.14 µV	4.88	2.25	1.57	0.83
DJ-496T	430-450 MHz	13.8 VDC	1.4 A	280 mA	5 W	40	50	2k	<.12 µV	4.88	2.25	1.57	0.83
DJ-S11T	144-148 MHz	4.5 VDC	250 mA	33 mA	340 mW	20	50	2k	<.15 µV	3.93	2.16	1.1	0.41
DJ-S40T	420-449.995 MHz	13.8 VDC	600 mA	50 mA	1 W	100	50	2k	<.14 µV	4	2.2	1.2	0.41

** Power output is determined by choice of battery pack. †at 13.8VDC * 500mW with 6 VDC

ALINCO HF / VHF / UHF MOBILES

HF / 6 Meter Transceivers



DX-77T

HF – $699.95

HRO Discount Price

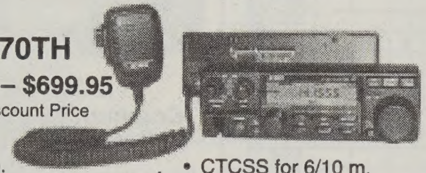
The DX-77T transmits on ham bands 10–160 meters in SSB, CW, AM, FM, and data. It has a general coverage receiver 150 KHz – 30 MHz.

- Output on SSB, CW and FM is 100 watts; on AM, 40 watts.
- 100 memories store mode, split, RF atten., frequency, AGC, gain.
- Two VFOs plus memory mode.
- Built-in speech processor, IF shift, CW audio filter, electronic keyer.
- Computer control option: ERW-4.
- Full QSK, 7-step semi break-in, or auto break-in CW modes.
- CTCSS tone access for 10m FM.
- Convenient front panel jacks for key, headphones, or external speaker. Rear panel connectors for external amp, antenna, EDX-2 tuner, computer control.

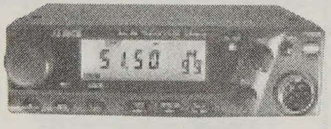
DX-70TH

HF / 6m – $699.95

HRO Discount Price



- All-mode.
- Includes general coverage receiver.
- 100 watt output from 1.8-30 MHz & 6 m.
- 100 memories with 10 memory group scans.
- Detachable control head.
- Dual VFO.
- CTCSS for 6/10 m.
- Full QSK and auto CW break-in.
- Built-in narrow band filter, RF preamplifier, speech processor, noise blanker.
- Size 2.25"(H) x 7"(W) x 9"(D).



DR-MO6TH

6 meter FM

$249.95

HRO Discount Price

Find exciting new contacts working FM on the 6 meter band. Work DX over several hundred miles with the many forms of propagation on this lowest amateur VHF band; ground wave, direct wave, sporadic-E, F2 reflection and back scatters, just to name a few. Covers the 6m band (50-54 MHz) with 20 watts high and 1 watt low output. This rig has 100 memories, a CTCSS encoder, and EMS-11 DTMF microphone (US only). Receiver has 12dB SINAD sensitivity.

2m / 70cm Dual-Band Mobiles

DR-620T

$339.95 – HRO Discount Price

With the optional EJ-47U, this radio has advanced 10F3 digital mode with speech compression technology.

- Transceiver on 2m and 440 MHz.
- Extended receive range: 87.5-174 and 335-480 MHz.
- Remote front panel w/ optional EDS-9.
- 200 memory channels.
- Set parameters, enter frequencies through the mike.
- D-SUB9 connector and optional EJ-50U TNC support digi-peat mode for APRS tracking and 9600 bps packet.
- Scans: VFO, memory, programmed, CTCSS and DCS.
- Transmit power 50 / 35 / 10/ 1 W.

DR-605TQ

$339.95

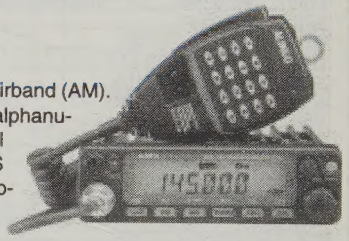
HRO Discount Price

- Extended receive range: 136-174 MHz (includes AM) and 420-470 MHz.
- 9600 BPS ready.
- 50 watts VHF and 35 watts UHF.
- Built-in CTCSS tone encoder and decoder.
- Channelized display.
- Cross band memory.
- Cross band repeater function.
- Band, programmed, or memory scan.
- Built-in duplexer.
- 50 memory channels per band memories plus call channel.
- Tone burst 1450, 1750, 2100 Hz.

2m or 70cm Single Band Mobiles

DR-135TMKII

$169.95 – HRO Price



Transmit and receive 2 meter FM and receive Airband (AM). Ignition key power control, theft alarm, 7 place alphanumeric display, front panel data input, optional internal packet module can be used with APRS (TM), rear panel serial port connection. 100 memories, 10 autodial memories, and more.

- DR-135TP has an EJ-41U TNC for 1200/ 9600bps packet and APRS.
- 50/10/5 watts output settings.
- Accepts optional EJ-47U digital voice module.
- Ignition key activated On/Off.
- Multifunction direct input DTMF backlit microphone.
- Huge LCD with 7 character alphanumeric display.
- CTCSS/DCS encode/decode.
- TXCO with 2.5ppm stability.

DR-235T

220 MHz

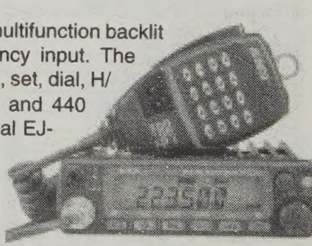
$249.95

DR-435TMKII

440 MHz

$299.95

HRO Prices



These mobiles have a unique multifunction backlit microphone with direct frequency input. The EMS-57 mike features V/M, call, set, dial, H/L, and more. These 220 MHz and 440 MHz models can accept optional EJ-41U internal TNC or EJ-47U digital voice module. The MKII TXCO supports a specification of ±2.5 ppm frequency stability.

Alinco Mobile Specifications

Model	Primary Use	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DR-135TMK#	Mobile	2 m	13.8 VDC	11 A	400 mA	5/10/50 W	100	50	600	<.16 µV	1.57	5.58	6.83	2.2
DR-235T	Mobile	222-225 MHz	13.8 VDC	8 A	400 mA	5/10/25 W	100	50	600	<.16 µV	1.57	5.58	6.83	2.2
DR-435TMK#	Mobile	430-450 MHz	13.8 VDC	10 A	400 mA	5/10/35 W	101	50	600	<.16 µV	1.57	5.58	6.83	2.2
DR-150TQ	Mobile	2 m Trans	13.8 VDC	10 A	600 mA	50 W	100	50	600	<.16 µV	1.6	5.6	6.2	2
DR-605TQ	Mobile	2m/440 MHz	13.8 VDC	11.5 A	1.2 A	50 W/35 W	50	50	600	<.16 µV	1.6	5.6	7	2.43
DR-620T	Mobile	2m/440 MHz	13.8 VDC	11 A	600 mA	50 W/35 W	200	50	2000	<.14 µV	1.6	5.5	7.28	2.2
DR-M06TH	Mobile	50-54 MHz	13.8 VDC	3 A	800 MA	20 W/2 W	100	50	600	<.16 µV	2.0	5.51	5	2.7

* Expand to 100 with optional EJ-19U †Expand to 240 with optional EJ-23U #TXCO with ± 2.5ppm frequency stability.

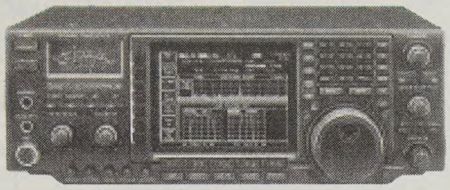
ICOM

Take your DXing to the Next Level
+30 dBm-class Third-order Intercept Point

IC-756PROIII

$CALL

HRO Discount Price

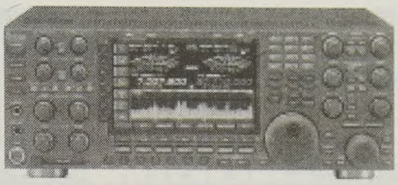


The 756PRO Third Generation's New Features

- Improved third order intercept points of +30dBm.
- The rig uses large inductors instead of small coils in the bandpass filter stage to handle both strong and weak signals without distortion.
- Low-distortion BPF switching is provided by using low distortion diodes with wide bandwidth characteristics.
- Fundamental-type 64 MHz roofing filter using a monolithic crystal filter. This provides a better shape factor and is less susceptible to intermodulation distortion.
- Two newly designed preamplifiers use the same basic circuit as the IC-7800 to minimize distortion and maximize dynamic range. Preamp-1 is a noiseless feedback design. Preamp-2 uses bipolar transistors for high gain.
- Real time spectrum scope with a mini scope function allows you to monitor the scope screen while you use other function menus.
- Eight channel RTTY TX memory where you can edit and send up to a 62 character message for each memory.
- Adjustable SSB transmit bandwidth with three types of high low combinations stored in memory. The built-in audio equalizer has separate bass and treble adjustments to tailor your transmit audio quality.

Inherited Properties from the 756PROII

- 32-bit floating point DSP & 24-bit AD/DA converters
- 30kHz to 60MHz general coverage receiver.
- AGC loop management.
- Dual watch to receive 2 signals on the same band simultaneously.
- Digital twin passband tuning.
- Manual notch function featuring 70dB attenuation..
- Automatic notch function.
- Digital voice recorder with a total of 90 seconds available for the 4 memory channels. The channels are soft partitioned to allow custom recording sizes.
- CW Memory Keyer.
- Adjustable noise reduction using 32-bit DSP processing.
- Adjustable noise blanker.
- Digital RF speech compressor.
- Highly stable transmitter using two 2SC5125 transistors in the PA unit.
- Highly stable crystal unit providing ±0.5ppm (-10C to +50C).
- Triple band stacking register.
- SSB data communication.
- 5-inch TFT color display.
- Built-in high speed auto antenna tuner.
- 2 TX/RX antenna connectors and RX antenna connector.
- Analog and digital meter.



IC-7800

$CALL

HRO Discount Price

The IC-7800 is an artistic fusion of forty years analog RF circuit development with cutting edge digital technology. The result is 110 dB dynamic range and +40 dBm 3rd order intercept point in the HF bands.

- General coverage receiver from 300 kHz to 60 MHz.
- Transmits on amateur HF bands (except 60m) plus 6m.
- 5- 200 watts out (5-50 W AM).
- High speed automatic antenna tuner.
- Two types of receive preamps and 7-step attenuator.
- 50 CTCSS tone encoder / decoder.
- VOX capability.
- DSP controlled CW keying waveform shaping. Memory keyer.
- Mechanical relay band pass filter.
- Two roofing filters.
- Automatic tracking pre-selector.
- Double conversion superhetrodyne system.
- AGC loop management using the DSP unit.
- AGC volume knob for fine tuning.
- Digital IF filter.
- Manual notch filter.
- Two completely independent receiver circuits.
- Real time spectrum scope.
- Four 32-bit floating point DSP units and 24-bit AD/DA converters.
- Ultra high stability OCXO unit.
- 50 MHz band preamplifier and mixer.
- Digital twin passband tuning.
- Variable level noise reduction.
- 7-inch wide color TFT LCD.
- RTTY/PSK31 operation without PC connection.
- Microphone equalizer and adjustable transmit bandwidth.
- CF memory card for recording personal settings.
- Digital voice recorder.
- RF speech compressor.
- SSB data mode.
- 4 antenna connectors.
- Triple band stacking register.
- Variable noise blanker.

Super Special

IC-718

$CALL

HRO Discount Price

All-band HF transceiver

- Receives: 0.03 ~ 29.995MHz.
- Transmits: HF amateur bands except 60m.
- Output power: SSB/CW/RTTY: 5~100 W variable, AM: 2~40 W variable.
- Modes: USB, LSB, CW, RTTY, AM.
- 101 memory channels.
- IF shift interference rejection.
- DSP with optional UT-106.
- FSK operation compatible.
- VOX operation, mike compressor, RF gain control.
- Built-in electronic keyer.
- 10-key pad for direct operating frequency entering and memory channel selection.

Icom HF Specifications

Model	Receive Freq Range	Power Supply	Current Drain Xmit	Power Output †					Mike Z ohms	Receive Circuitry	Sensitivity 1.8-30 MHz	RIT / XIT Range	Notch	Audio
				AM	FM	SSB	CW	FSK						
IC-703	30kHz-60MHz	13.8 VDC	20A	1-4	1-10	1-10	1-10		600	Double Conversion	<.16µv at 10 dB	±9.9 kHz		>1.0 W
IC-706MKIIG	30kHz-200MHz + 70cm	13.8 VDC	20A	40	100*	100*	100*	100	600	Dual Conversion (HF)	<.18µv at 10 dB	±9.9 kHz		>2.0 W
IC-718	30 kHz - 29.99 MHz	13.8 VDC	20A	40	100	100	100	100	600	Double Conversion	<.18µv at 10 dB	±9.9 kHz	Option DSP	>2.0 W
IC-746PRO	300 kHz - 60 MHz, 108 - 174 MHz	13.8 VDC	23A	40	100#	100#	100#	100	600	Triple Conversion	<.18µv at 10 dB	±9.9 kHz	Manual/ Auto DSP	
IC-756PROIII	30 kHz - 60 MHz	13.8 VDC	23A	40	100	100	100	100	600	Triple Conversion	<.18µv at 10 dB	±9.9 kHz	Manual/ Auto DSP	>2.0 W
IC-7800	30 kHz - 60 MHz	85-265VAC		50†	200†	200†	200†	200†	600	Double Conversion	<.16µv at 10 dB	±9.9 kHz		>2.6 W

† Output is continuously adjustable from 5 to full power   # 50 watts on 2 meters, 20W 70cm G Model   * 50 watts on 2 meters, 20W 70cm

Icom Base Station Accessories

OPTIONS		HF RADIOS														VHF/UHF		RECEIVERS						
		781	775	765	756	746	738	736	728	718	707	706	706 MKII	703	7800	820	821 H	R9000	R72	R75	R 100	R7000	R8500	HRO Price
External AC Power Supply	PS-85				*	*				*	*	*	*			*	*							$269.95
	PS-125				*	*																		$299.95
External Speakers	SP-7						*	*	*	*	*	*	*	*		*	*		*		*	*	*	$75.95
	SP-10											*	*	*										$55.95
	SP-12											*	*	*										$44.95
	SP-20	1	*	1			*	*	*	*	*				*	*	*	1	*		*	*	*	$239.95
	SP-21		*		*	*	*	*		*	*					*	*							$119.95
Automatic Antenna Tuner	AH-4		*	*	*	*	*	*	*	*	*	*	*	*										$259.95
	AT-180		*	*	*	*	*	*	*	*	*	*	*	*	*									$364.95
HF Amplifier	IC-PW1	*	*	*	*	*	*	*	*	*	*	*	*											$4,699.95
Antenna Selector	EX-627	*	*	*	*	*	*	*	*	*	*	*	*											$449.95
Antenna	AH-2B			*		*		*	*	*				*										$349.95
Weather Proof Preamps	AG-25															*	*							$149.95
	AG-35															*	*							$169.95
	AG-1200																							$169.95
Microphones	HM-36	*	*	*		*	std		*															$69.95
	HM-103											*	*	*	*									$74.95
	HM-118T												*											$59.00
	SM-6	*		*			*	*	*	*	*					*	*							$99.95
	SM-20	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*							$189.95
Mounting Brackets	MB-5								*	*	*					*	*		*	*			*	$59.95
	MB-12																					*		$59.95
	MB-18																							$59.95
	MB-19		*																					$74.95
	MB-23				*																			$15.95
	MB-49						*	*		*														$59.95
	MB-62												*	*										$25.95
	MB-63												*	*										$18.95
	MB-65													*										$35.95
Handle	MB-23								*		*					*	*		*	*			*	$15.95
	MB-72													*										$14.95
CI-V System	CT-16	*	*	*		*	*	*	*	*	*	*	*					*						$119.95
	CT-17	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	$129.95
High Stability Crystal Units	CR-282		*	*		*	*	*																$149.95
	CR-293															*	*			*				$279.95
	CR-338									*	*													$79.95
	CR-502				*							*	*											$76.95
FM Unit	UI-8																		*					$109.95
	UI-9										*													$99.95
DSP Unit	UT-106									*				*						*				$139.95
Tone Encode	UT-30			*			*	*	*		*													$49.95
Tone Squelch	UT-34																							$79.95
	UT-86												*											$69.95
Voice Synthesizer	UT-66		*																					$69.95
	UT-102				*	*				*			*	*						*				$69.95

1: Style and size are matched with the equipment.

Icom HF Filters

Filter	Center Frequency	Bandwidth	Mode	781	775	765	756	746	738	737A	736	735	729	728	725	726	718	707	706	706 MKII	703	R71 A	R72	R75	R8500	R9000	HRO Price
FL52A	455 kHz	500 Hz	CW	std		std	*	*	*	*	*						*	*			*			*	*	*	$179.95
FL53A	455 kHz	250 Hz	CW	std	*	*		*	*	*	*						*	*			*			*			$179.95
FL63A	9.0106 MHz	250 Hz	CW									*															$99.95
FL96	455 kHz	2.8 kHz	SSB					*									*							*			$179.95
FL100	9.0106 MHz	500 Hz	CW				*	*	*	*	*		*	*	*	*			*	*		*	*	*			$119.95
FL101	9.0106 MHz	250 Hz	CW	std	*	*	*	*	*	*	*		*	*	*	*			*	*			*	*			$99.95
FL102	9.0100 MHz	6.0 kHz	AM	std	*	*																					$75.95
FL103	9.0115 MHz	2.8 kHz	SSB	*				*											*	*		std		*			$109.95
FL-222	455 kHz	1.9kHz	SSB		*		*	*									*				*			*			$199.95
FL-223	9.0115 MHz	1.9 kHz	SSB		*		*	*											*	*				*			$99.95
FL-232	9.0115 MHz	350 Hz	CW		*		*	*											*	*				*			$89.95
FL-257	9.0115 MHz	303 kHz	SSB														*				*			*			$199.95

Check the HRO Secure Web Site http://www.hamradio.com
frequently for special offers and manufacturers' coupons.

QRP HF + 6m

IC-703 Plus

HF Plus 6m

$CALL

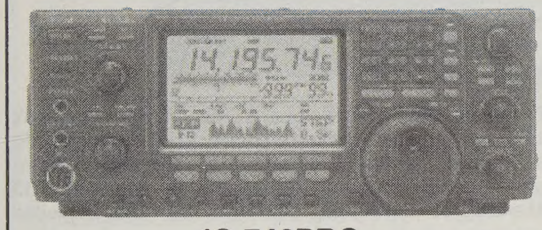
HRO Discount Prices

14.025.000
M1 SPL A/B XFC

The IC-703 Plus is a full featured QRP, portable transceiver covering the HF and 6m bands. It features a built-in automatic antenna tuner, DSP capabilities, 10 watts of output power, a highly sensitive receiver, current consumption control and high frequency stability (±0.5 ppm). The emphasis is on portability and economy.

- Built-in automatic antenna tuner covers 1.8 to 54 MHz matching VSWR 1:7 to 2.0.
- DSP capabilities include a noise reduction function and automatic notch.
- Provides 10 W out (4 W on AM) at 13.8 VDC and 5 W (4 AM) with 9.6 VDC.
- Highly sensitive receiver of 0.16µV (0.18µV for 50MHz band).
- Maximum power set function at 10 / 5 / 2.5 / 1 / .5 watts.
- Controller detachable from main unit.
- IF shift, variable SSB carrier point.
- Spectrum scope function and SWR graphic function.
- Multiple filter options.
- Auto tuning step function.
- Speech compressor.
- RIT, VOX and noise blanker.
- 9600 bps data terminal on rear panel.
- Combined SQL and RF gain control knob.
- 105 memory channels.
- CI-V system capability.
- Bandstacking registers.
- Built-in preamplifier.

HF + 6m + 2m



HRO
Discount Price
$CALL

Super
Special

PC Ready!

IC-746PRO

Icom has created a whole new radio category! The IC-746PRO uses 32-bit DSP features to create the most flexible signal enhancing and interference reduction ever offered in this type of radio. With the 32-bit DSP processor and 24-bit AD/DA converter, the ham radio operator has the best listening environment for current band and operating conditions.

All mode digital modulation and demodulation

For signal purity and clarity, an all mode digital PSN (Phase Shift Network) system has been incorporated into the DSP system. For transmit, this greatly reduces intermodulation distortion, producing the highest quality audio. The PSN separates the signal from noise by phasing out noise and other unwanted signals.

You will never have to purchase optional filters. With more than 51 different filter widths included, just dial in the width you want. Then select whether you want a sharp or soft filter shape for SSB and CW modes. Digital filters are separate from the SSB filters.

- Continuous coverage receiver from 30 kHz to 60 MHz and 108-174 MHz. Transmits on HF*, 50MHz and 144 MHz bands.
- RTTY demodulator and decoder, ample CW functions, memory keyer, full break-in keying.
- Microphone equalizer, digital RF speech compression and a continuous duty 100W transmitter for all bands and all modes (AM is 40W).
- Large, multi-function LCD for ease of use in most any lighting condition. Multi-functions include band scope, memory names, key assignments, twin PBT settings, split frequency and memory keyer contents.
- Digital Twin PBT with manual notch filter, digital noise reduction and AGC loop management.
- Built-in automatic antenna tuner covers HF and 6 meter bands.

HF + 6m + 2m + 70cm All-Mode

PC Ready!

HRO
Discount Price
MKIIG $CALL

Super
Special

14.195.706
M1 SPL A/B XFC

IC-706MKIIG

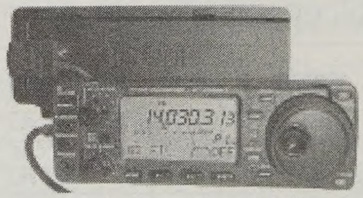
The compact, feather-weight IC-706MKIIG all-mode transceiver updates the IC-706. Improvements include: VHF band RF stage, standard tone squelch, 2 optional filters, and a built-in DSP plug in IC-UT106.

The IC-706MKIIG covers the HF bands from 160 - 10* meters as well as the six, two meter and 70 cm bands. It includes all modes over its entire frequency range, including FSK for RTTY operation, and narrow FM on the HF bands. Receives 30 kHz to 70 cm with wide AM and wide FM broadcast reception.

It has a 100 watt output transmitter (40 watts AM) from 160 through 6 meters, with 50 watts output on 2 meters (4 watts AM) and 20W on 70cm. VOX is included, as well as a speech processor, I-Loop PLL circuit, and optional slot for narrow SSB filter (FL-223). Multiple CW functions include a built-in keyer, optional narrow receiver filter slot, full break-in (QSK), adjustable CW pitch and CW reverse functions, tone squelch, backlit switches, AF DSP, and auto repeater function.

101 memories store up to 9 alphanumeric characters each. A dot matrix display shows the popular menu features, frequency and multifunction meter data. A spectrum scope displays band activity at a glance.

The front panel detaches to aid mobile installation. The PS-85 optional switching power supply is great for making the IC-706 a base station. The AT-180 optional automatic antenna tuner for coax systems and the AH4 for long wire, whip or backstay operation.



Remote Head Kit

RMK-706

Remote head kit for 706 product. (Includes MB-62, MB-63, and OPC-581.) **HRO Price $70.95**

* Not 60m

2m / 440 MHz Base Station (+ 1.2 GHz)

IC-910H
$CALL

Super Special

Two meters and 70 cm are standard on the IC-910H. With the optional UX-910, operate also on 1200MHz. It is an all mode transceiver with up to 100 W output. It's a great rig for satellite operation. It features a large LCD display and 10-key pad for ease of operation.

- 100 W on 2 meters, 75 W on 440 MHz and 10 W with the optional UX-910 on 1200 MHz.
- Simultaneously works two bands. Cross band and full duplex operation.
- Satellite mode operation support.
- 10-key pad for direct entering of frequency or memory channels.
- 9600 bps PACKET communication.
- 3.5 inch large LCD.
- IF shift interference rejection.
- Optional DSP capability with the AF DSP UT-106.
- Full CW support with speed adjustment, full and semi-break in.
- 50 CTCSS tone encoder, VOX, speech compressor, 99 memory channels.
- PC interface with optional CT-17.

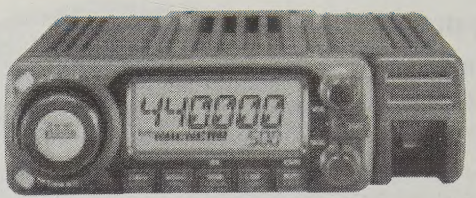
Cloning Software

Icom cloning software for Windows allows you to preprogram memory channels with operating frequencies, set tones, set power levels, set squelch levels, set up auto-dial DTMF frequencies, and exchange operating frequencies. **Call for price quotes.**

- **CS2710** for 2710H (with OPC-646).
- **CSWHH-4** for Windows (IC-T2A, T7A, W32A, T8).
- **RS-746** is remote software for IC-746.
- **RS-746** control software without cable (746).
- **CSWHH-4** software & cable (T2H, T7H, T8A, W32A).
- **CSW710/207** software without cable (207H, 2710H).
- **CSWHHRX** software/cable (R2, R10).
- **CS-R3** without cable (R3).
- **CS-R5** without cable* (R5).
- **CS-2720H** without cable* (2720H).
- **CS-V8000** without cable (V8000).
- **CS-V8A** without cable (V8A).
- **CS-2800** without cable (2800)
- **CS-T90A** without cable (T90A)

* **OPC-478U USB** cable for IC-2720H and IC-R5.

Digital Transceivers



NEW!

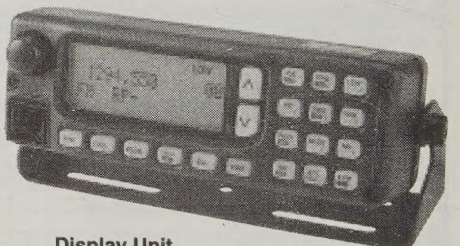
ID-800H
$CALL
HRO Discount Price

The ID-800H transceiver is a vital part of a D-Star digital voice system. It is a dual band mobile with the following features:

- TX: 144-148 MHx and 420-450 MHz.
- RX: 118-173.995 MHz, 230-549.995 MHz, 810-999.99 MHz (cell blocked).
- FM (analog), AM (analog RX only), GMSK (digital) modes.
- Power out on VHF is 55 W, 5 W selectable; UHF 50 W with 15 W, 5 W selectable.
- 512 memory channels with 500 regular, 2 call and 10 scan edges.
- Detachable front panel included.
- GPS position exchange with external GPS.
- 20 character short text messaging with on-screen display.

IC-ID-1
$CALL
HRO Discount Price

While the ID-1 transceiver is a vital part of a D-Star system, you won't have to wait for a new repeater to be set up in your area. This rugged little rig operates with current analog 1.2 GHz repeaters, plus simplex digital operation with another ID-1. Its operating frequency range is 1240-1300 MHz with FM and GMSK (Digital) modulation formats. The ID-1 includes alphanumeric memory channels, CTCSS encode/decode and scanning, PLUS full PC control via the USB port (a black box 1.2 GHz radio!). Now for the fun part . . . the ID-1 supports a 10BASE-T ethernet cable for the 128K Data operation! Explore the benefits of wireless high-speed integrated digital connections!



Display Unit

Icom VHF Specifications

Model	Freq Range	Mode	Power Supply	Current Drain Xmit	Curernt Drain Rec	Power Out Watts	Ant Z ohms	Mike Z ohms	Sens	Audio Power	Built-in AC Supply
IC-208H	2m / 440 MHz%	FM	13.8 VDC	12 A	1.0 A	55 / 50	50	600	<.18 µV	3 W	no
IC-910H	2m / 440 MHz*	All	13.8 VDC	23 A	2.5 A	100/75/10*	50	600	<.18 µV	2 W	no
IC-2100H 25N	2m	FM	13.8 VDC	12A	1.0 A	50	50	600	<.18 µV	2.4 W	no
IC-2200H	2m	FM	13.8 VDC	16 A	1.0 A	65	50	600	<.18 µV	2.4 W	no
IC-V8000	2m	FM	13.8 VDC	15 A	1.0 A	75	50	600	<.15 µV	>2.0 W	no
IC-2720H	2m / 440 MHz%	FM	13.8 VDC	12A	1.8 A	50 / 35	50	600	<.18 µV	>2.4 W	no
ID-800H	2m / 440 MHz%	FM	13.8 VDC			50 / 50	50	600			no

† Extended receiver coverage 118-174 MHz (airband included), 440-450 MHz %extended receiver range. See text with radio.

2m / 70cm MOBILES

2m Mobiles

IC-V8000

$CALL

HRO Discount Price

Super Special

75 watts of power for your ultimate 2m mobile experience.

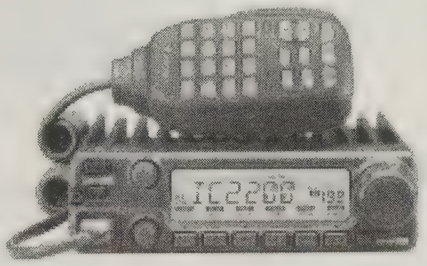
The IC-V8000 combines a one piece, die-cast aluminum chassis with 75W of transmit power to give you the most powerful 2m mobile transceiver in its class.

- Remotely control rig with HM-133 mike.
- Easy operation with a quick reference of user-defined memory channel information.
- 6 character alphanumeric display.
- CTCSS & DTCS operation are standard.
- Clone from a PC or between radios.
- Weather Alert Scan (US version only).
- Front firing speaker.
- Dynamic Memory Scan has 200 alphanumeric memories. DMS system allows full customization of scanning requirements in 10 banks.
- DTMF encoder is standard with 10 channels with up to 24 digit DTMF codes.
- Optional UT-108 provides DTMF decode.
- FM narrow mode switch-able.

IC-2200H

$CALL

HRO Discount Price



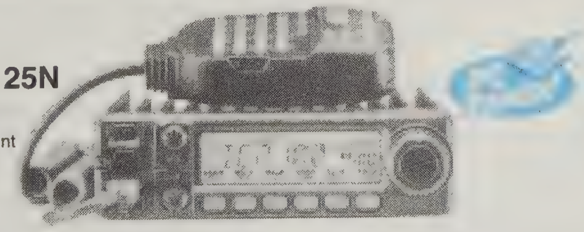
The IC-2200H provides enhanced digital features plus a stable 65W output. The 65W are provided by a MOS-FET amplifier supported by a one-piece aluminum chassis to keep the transceiver cool even at high duty cycles.

- Retains simple operation with a large tuning dial. Secondary functions are recalled by holding the appropriate button.
- A total of 207 alphanumeric memory channels.
- Dynamic memory scan allows scanning of selected memory banks.
- 50 CTCSS and 104x2 DTCS encode/decode.
- Selectable green or amber display.
- "Pocket Beep" signals an incoming call.
- Optional Digital Unit (UT-115). When connected to an external GPS, position information can be exchanged.
- 24 DTMF autodial memories.
- DTMF code squelch/pager with optional UT-108.
- Weather channel.
- Selectable squelch delay.
- Built-in 10dB squelch attenuator.

IC-2100H 25N

$CALL

HRO Discount Price



- Select a green or amber display for easy viewing in any light.
- IMD protects from excessively strong signals.
- Squelch attenuator reduces interference from strong nearby signals.
- Selectable power from 50 W down to 5 or 10 W.
- Tone squelch standard with pocket beep and tone scan functions.
- 113 memory channels.
- PC ready and 14 channels for 16 digit DTMF codes.
- Full remote control from the mike.
- CTCSS encode / decode with tone scan standard.

Dual Band Mobiles

IC-208H

$CALL

HRO Discount Price

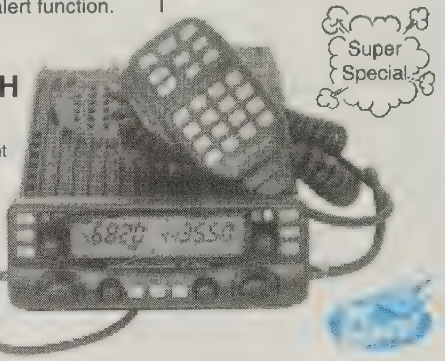
The IC-208H features 55 watts out on 2m and 50 watts on 70 cm. The output is switchable in three steps from 5 watts to 15 watts to the maximum power for each band.

- Wide-band receiver – 118 to 999.990 MHz (cellular blocked).
- 500 memory channels separable into 10 banks. (Total number of memory channels is 512 including 5 pairs of scan edges and 1 call channel for each band.)
- Controller separation capability for flexible installation with included cable.
- 6-character alphanumeric easy-to-see large LCD display. Memory channel names can be input for easy recognition.
- Weather alert function.
- Select LCD backlighting color: amber or green.
- Large, clearly labeled function keys for user-friendly operation.
- Dynamic memory scan for flexible channel scanning.
- Multiple scanning modes including full, program, priority, memory channel, bank, skip and tone scan.
- Switchable wide/narrow channel spacing.
- Standard accessories include HM-133 hand microphone, OP-600 separation cable, DC power cable and mounting bracket.

IC-2720H

$CALL

HRO Discount Price



The IC-2720H is a dual band V/V, U/U mobile transceiver with V/V, U/U or V/U simultaneous receive capability and independent tuning knobs. Has selectable amber and green display, MOS-FET power amp and a multifunction microphone HM-133. It also supports 9600 bps packet communications.

- Extended receive capability. 118-550 MHz (left side) 118-174, 375-550, 810-999.99 (right side) (cellular blocked).
- 50 W on VHF and 35 W on UHF.
- Separated control from main unit. 3.5m OPC-156 separation cable included.
- 212 memory channels.
- 104 x 2 DTCS / 50 CTCSS tone squelch operation is standard.
- Selectable squelch attenuator and delay.
- 4 step LCD backlight.
- Sub-band auto mute.
- 12 DTMF memories.
- Auto repeater function.
- High speed Tx/Rx switching time for digital repeater access.

IC-R3

$CALL
HRO Price

A first for a handheld receiver: a built-in TFT color LCD shows tuning step, receiving frequency, memory channel number, and more. A clear TV picture can be displayed. NTSC M, PAL N, PAL B/G or PAL I is supported depending on version (only NTSC in US). Has super wide frequency coverage from 0.495-2450 MHz (cell band blocked) with AM, FM, wide-FM, and TV picture receive capability standard. Receives ATV on 430, 900, 1200 and 2400 MHz.

Super Special

IC-R5

$199.95
HRO Price

The IC-R5 receives 100 kHz to 1209.996 MHz (cellular blocked). It has 500 alphanumeric memory channels, DTCS and CTCSS built-in, high speed scanning, pulse control squelch function and weather alert. The Icom exclusive DMS scanning system allows the user to customize memory channels into separate scanning lists from 2-100 channels per bank. Receives AM / FM / WFM. The Icom Hot 100 SWL frequencies and TV channels are preprogrammed. The IC-R5 is computer programmable with optional software and programming cables (RS-232 or USB cables are available).

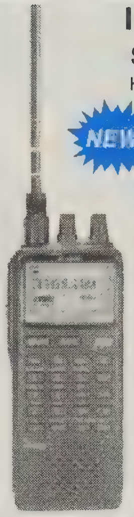
IC-R5 Accessories

Model	Description	HRO Price
Cloning		
CS-R5	Cloning software requires OPC478 or OPC478U	$40.95
OPC478	PS232C Cloning cable	$45.95
OPC478U	USB Cloning Cable	$60.95
OPC474	Cloning Cable-Handheld to handheld	$18.95
Headphone Accessories		
HP-4	Lightweight headphone	$29.95
HM-133	Earphone	$90.95
Other Accessories		
AS-92SMA	BNC antenna adapter	$16.95
BC-149A/D	Wall Charger	$40.95
CP-18A	Cigarette Lighter Cable	$30.95
LC-146A	Carrying Case	$24.95

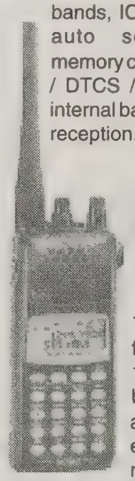
IC-R20

$CALL
HRO Price

NEW!



The IC-R20 retains many of the features of the R10 including voice scan control, attenuator, RF gain control, noise blanker, automatic noise limiter, multiple scan functions, CI-V PC control, backlit keypad. New features include wide range receive 0.15 to 3304.9999 MHz (cell band blocked), SSB/CW/AM/FM/WFM, cual watch between bands, IC audio recorder, auto squelch, 1250 memory channels, CTCSS / DTCS / DTMF decode, internal bar antenna for MF reception.



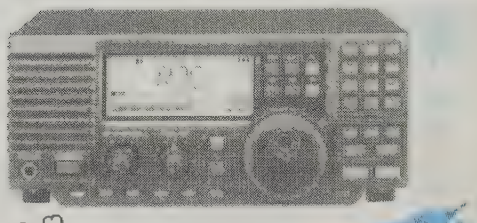
IC-R10

$CALL
HRO Price

The R10 receives from 0.5 MHz to 1300 MHz. Unblocked version available to government authorized agencies.

- All mode receive: FM, WFM, AM, USB, LSB, CW and SSB.
- Multi function LCD.
- Automatically tuned front-end filters.
- 1000 memories. Store eight-character names in each channel.
- Real-time bandscope to find busy frequencies.
- The "busy catch scan" searches for the next busy frequency (FM only) while the receiver is detecting a signal.
- Voice Scan Control only.
- Program the memory channels from your PC with the optional CS-R10(DOS) or CSWHH RX (Windows) software.

Notice: The R3, R5, R10, R8500, and PCR1000 are available unblocked to authorized Federal and State Government Agencies.



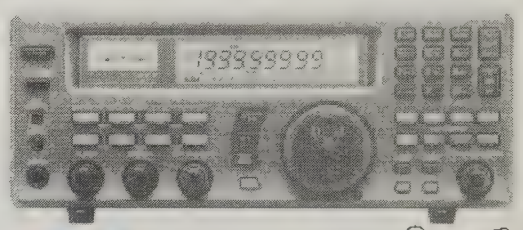
Super Special

IC-R75

$CALL – HRO Price

(Limited Quantity Available)

This receiver covers the HF bands plus 6 meters (0.03 to 60 MHz). It features twin PBT, synchronous AM detection, built-in DSP capability, and a front mounted speaker. Modes include USB/LSB, CW, RTTY, AM/S-AM and FM. A complete line of filters are available. Operates at 13.8 VDC ± 15% at 2.0 A. Features 101 memories (99 regular and 2 scan edges. Program scan, memory scan and priority scan. Direct frequency input with numeric keypad. Two-level preamp, noise blanker and selectable AGC.



IC-R8500

Blocked Version

$CALL – HRO Price

(Limited Quantity Available)

Super Special

This super wide band receiver offers the high performance of the IC-R9000 at a much lower price. Receive from 0.1 to 2000 MHz in all modes (cellular band blocked). If there are any communications out there, you'll be able to hear them with minimum interference.

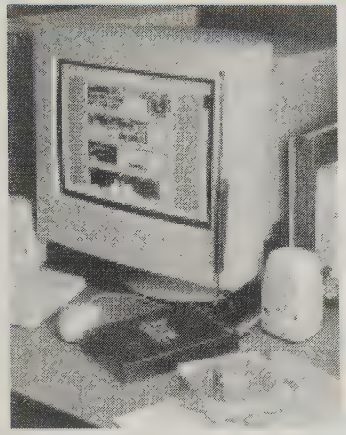
- All modes (USB, LSB, CW, AM, FM WFM) plus CW narrow (optional FL-52A required), AM & FM narrow.
- 1000 memory channels store frequency, mode and tuning step.
- Channels in 20 banks of 40 channels plus auto memory write of 100 channels and skip area of 100 channels. Alphanumeric names (8 characters) may be assigned.
- Noise blanker, RF attenuator, selectable AGC.
- Built-in AF shift & APF.
- High receive sensitivity and built-in TCXO for high stability.
- Also has: RS-232 interface, versatile scanning functions, various tuning steps, 3 antenna connectors, S-meter squelch, sleep timer, REC and REC remote terminals for tape recorder control.
- Optional voice synthesizer (UT-102 required),

Icom Receivers Web Site

Icom America, Inc. and PerCon Corp. provide a website for your scanning enjoyment! Go to http://www.Icomreceivers.com to download memory channels for your Icom computer programmable receiver. The IC-PCR100, IC-PCR1000, IC-R2, IC-R10, IC-R8500, and IC-R75 are supported. Future radios will be added.

ACCESSORIES

PC-Controlled All-Mode Receiver



(Computer required. Shown here for illustation.)

IC-PCR-1000

$CALL

Listen to the world right from your PC: broadcast radio, TV, ham stations, marine, aviation, and more. Control this receiver on any personal computer via three interface screens. Unblocked version available to government authorized agencies.

Wide band coverage from 10-1300 MHz (cell phone blocked). All modes: AM, FM, WFM, USB, LSB, CW. Has IF shift, noise blanker, six scan types, programmable tuning steps, RF attenuator, on-line help and unlimited memory channels. Add 9600 baud data receive with a third party TNC. Also features a real-time bandscope function, DSP plug-in option.

Package includes AC adapter, telescoping antenna with BNC, RS-232C cable, software for Windows (software supports Windows XP and older OS), and an external speaker plug. Optional accessories include DC power cable, wide band base station antenna, and a choice of several external speakers. If your Windows OS support is not in the box, it can be downloaded from the Icom website.

IC-PCR-1000 02 BON

$CALL

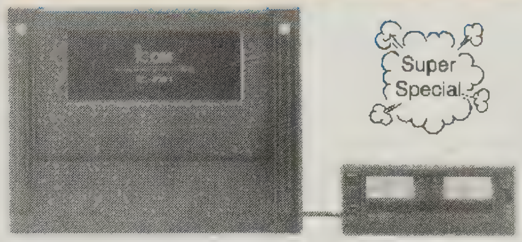
PCR1000 Blocked with Bonito Software Package.

IC-PCR-1000 07 BON

$CALL

PCR1000 Unblocked with Bonito Software Package. (FCC Approved users only)

HF + 6m Amplifier



Super Special

IC-PW1

HRO Discount Price $Call

The IC-PW1 linear amplifier provides a wide frequency coverage with up to 1kW output requiring only a maximum of 100 watts input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands from 160 meters to 15 meters plus 6 meters (10 m conversion information for licensed hams) and includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range allowing the PW1 to be used with almost any rig – not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle. Single box shipping and the remote head is included.

HF Antenna Tuners

AH-4

Automatic HF Antenna Tuner

Tune up from HF through 50 MHz band. The AH-4 auto-tuner covers all amateur bands from 80 through 6 meters when used with a minimum 23' long wire antenna. Wih the optional AH-2b antenna element, tune 40 through 6 meters for mobile operation.

It has automatic band changes and tunes usually in less than 2.5 seconds. The 45 memories store SWR minimum and tuning combinations. With those Icom radios with the TUNER feature, the AH-4 is remotely controlled from the radio front panel. Requires only 300 mW to tune and handles up to 120 watts. **HRO Price $259.95**

Icom HF Tuners

Features	AT-180	AH-4
Input Power (Watts)		
Max	120	120
Min	8	10
Auto Tune Time (seconds)		
New Band	2 - 4	2 - 3
Same Band	≤3	1
Tuning Accuracy	VSWR<1.5	VSWR<2:1
Auto Band Switching	yes	yes
Preset Matching	CPU Controlled	CPU Controlled
Power Supply	13.8 VDC	13.8 VDC
Frequency Coverage	1.8-28 MHz	3.5-54 MHz
Antenna System	Coax fed Antennas	Long wire, whip, boat backstay
Radios	IC-706	Most
HRO Price	$364.95	$259.95

Note: AT180 will work with most Icom HF rigs, but some need additional cabling to operate.

Handheld Batteries/ Chargers

Model	Volts	Rating mAh	Wall Charger	Desk Charger	HRO Battery Prices
BP-8	8.4	800	BC-16u	BC-35	$99.95
BP-83	7.2	600	BC-110A	BC-72	$90.95
BP-84	7.2	1000	BC-110A	BC-72	$99.95
BP-131	7.2	900		BC-119*	$119.95
BP-157	7.2	900	BC-77A	BC-119*	$59.95
BP-160	7.2	700	BC-77A	BC-119*	$66.95
BP-171	4.8	700	BC-74A	BC-119*	$83.95
BP-172	4.8	650	BC-74A	BC-119*	$69.95
BP-173	9.6	600	BC-74A	BC-119*	$99.95
BP-180	7.2	600		BC-119*	$83.95
BP-194	**				$18.95
BP-195	9.6	700	BC-110A	BC-119*	$42.95
BP-196	9.6	1050	BC-110A	BC-119*	$53.95
BP-197	**				$24.95
BP-198	4.8	700	BC-110A	BC-119*	$59.95
BP-199	6	700	BC-110A	BC-119*	$70.95
BP-200L	9.6	760	BC-110	BC-119N	$89.95
BP-202				BC-119N	$17.95
BP-204	**				$35.95
BP-206	3.6	1650	BC-136A	BC-135	$63.95
BP-208N	**				$18.95
BP-209N	7.2	1100	BC-137	BC-119N	$53.95
BP-210N	7.2	1650	BC-137	BC-119N	$79.95
BP-211N	7.4	1600	BC-137	BC-119N	$89.95
BP-222	7.2	600	BC-137	BC-119N	$35.95

* Note: The new BC-119N-01 has to have either the AD-75 or AD-88 *as well as* adapters (see below).

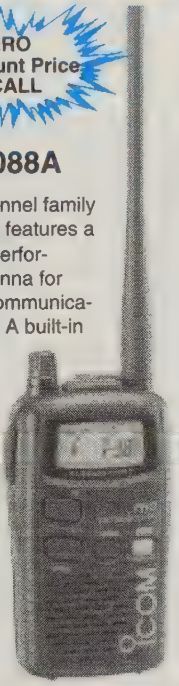
** "AA" Alkaline Pack.

BC-119 Adapters

Adapter	For Batteries	HRO Price
AD-25	BP-131A, BP-132A, BP-157A	$63.95
AD-27	BP-100, BP-130	$18.95
AD-28	BP-131/132/167, BP-160/174 *(+AD-75)*	$18.95
AD-50	CM-166 *(+AD-75)*	$17.95
AD-51	BP-171/172/173, BP-180 *(+AD-75)*	$14.95
AD-56	BP-171/172/173, BP-180 *(+AD-75)*	$18.95
AD-67	CM-140/141/142	$10.95
AD-68	CM-138/139/185	$14.95
AD-69	BP-185/186	$19.95
AD-81	BP-195, BP-196	$17.95
AD-87	BP-198, BP-199, BP-200(*+ AD 88)*	$8.95
AD-94	BP-209/210/222	$17.95
AD-101	BP-209/210/211, BP-222	$25.95

Family Radio

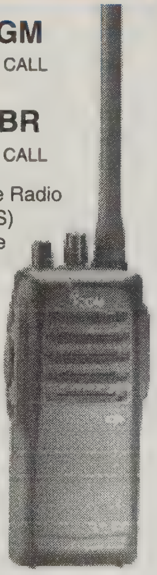
HRO
Discount Price
$CALL



IC-4088A

This 14-channel family radio model features a long, high-performance antenna for extended communications range. A built-in voice scrambler enhances your privacy. 38 CTCSS frequencies. Use AA or NiCd batteries.

GMRS Radio



IC-F21GM

HRO Price – CALL

IC-F21BR

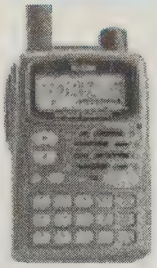
HRO Price – CALL

General Mobile Radio Service (GMRS) frequencies are for family use and extend your operating range up to 5 miles simplex and 25 miles through a repeater. A licence is required. Call for quotes.

IC-F21GM: 7 channels shared with the Family Radio Service (FRS), provides 15 channels and 4 W output power.

IC-F21BR: similar but also can be used for business applications.

Tri-Band



IC-T90A

HRO Price – CALL

- Wideband AM, FM and WFM receive.
- 5 watts out on 6m, 2m and 70cm.
- Receiver 495 kHz to 999.990 MHz (cellular blocked).
- 555 alphanumeric memory channels with DMS
- DTCS and CTCSS tone squelch. DTMF encoder with 10 memories.

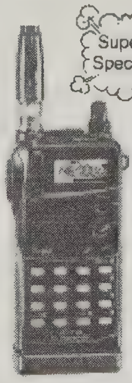
2m / 70 cm

IC-W32A

HRO Price – CALL

- 200 memories.
- PC programmable.
- VV / UU / VU performance.
- 5W out with BP-173.
- Weatherchannels.
- CTCSS, cross-band repeat.
- Extended receive.
- Separate analog volume and adjustable squelch controls.

Super Special



IC-T7H

HRO Price – CALL

This HT fits easily in the palm of your hand. Carry it in your pocket or small bag.

- 70 memories, 9 DTMF autodial memories.
- High speed scan/ scan timer.
- Encode/decode included.
- 6W out 13.8 VDC..
- One touch operation.
- PC programmable.
- Easy scanning display.
- Autoband selection, memory allocation.
- Wide band receive.
- Microphone remote control.
- Compatible with T22A, W31A and Z1A accessories.

Single Band

D-STAR Digital

HRO
Discount Price
$CALL

IC-V82

NEW!

2 Meter

IC-U82

UHF

The IC-V82 has 7 watts out and the IC-U82 has 5 watts. Features D-STAR digital voice with optional UT-118.

- V82: TX 133-148 MHz; RX 136-174 MHz.
- FM (analog) GMSK (digital).
- 200 alphanumeric memory channels, 1 call channel, 6 scan edges.
- 10 memory banks and band link scan.
- 5 character alphanumeric display.
- Built-in CTCSS and DTCS encoder/decoder.
- 16 DTMF autodial memories.
- PC programmable.
- Optional Digital Unit - UT-114.
- Optional DTMF decoder UT-108 offers ANI and pager functions.
- Optional voice scrambler unit, UT-109 or UT-110.
- 20 character short text messaging.

HRO
Discount Price
$184.95

IC-T22

2 Meter

Now with BP-180 Battery

- 40 memories.
- Wide-band reception.
- Runs directly from 12 V for 5 W output.
- Slim, easy-to-use.
- Excellent receive audio.
- "Log-in" feature memorizes transmitted frequencies.
- Battery pack compatible with IC-Z1A, IC-W31A, IC-W32, IC-T7H.

Super Special

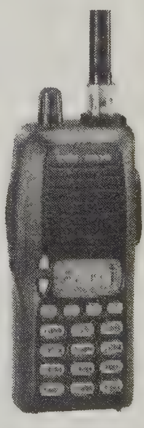
IC-T2H Sport

2 Meter

Six watts of power, military rugged, and easy to use – this is the same great radio as the IC-T2H but without the cost of the charger and Ni-Cd batteries. Either use AA Alkaline batteries, create your own pack, or go for the optional 1650 mAh battery pack. You have the freedom and convenience of customizing your setup. This is the perfect backup or second HT.

- 43 memories.
- 5 DTMF memories with up to 32 digits codes and re-dial for autopatch repeaters.
- LCD backlight.
- Transmits 140-150 MHz; receives 136-174 MHz.
- 10 weather channels.
- Encode/decode tone squelch operation standard. Includes pocket beep and tone scan.
- 8 front panel keys are custom programmable by the user by cloning or manual keypad.
- Direct keypad frequency entry.
- MIL SPEC C/D/E for shock and vibration.

Super Special



IC-V8

2 Meter

HRO Price – CALL

- Std DTMF encoder. Optional DTMF decoder (UT-108).
- 100 memories.
- 5.5 W output.
- 5 character alphanumeric display.
- 16 button keypad for easy-to-access functions.
- Reverse shift function.
- PC cloning capability.
- CTCSS/DTCS standard.

HANDHELDS & ACCESSORIES

Icom Handhelds

Model	Frequency	Power Supply	Power Out Transmit*	Current Transmit	Drain Receive	Sensitivity at 12 dB	Height in(cm)	Width in(cm)	Depth in(cm)	Weight oz(g)	HRO Price
IC-T2H Sport	140-150MHz†	9.6VDC	6.0/1.0W	1.5 A	75 mA	<.18µV	5.5(14)	2.3(5.8)	1.3(3.2)	14.8(420)	CALL
IC-T7H	2m/440	7.2 VDC	6.0/1.0 W	1.2 A	600 mA	<.16µV	4.9(12.5)	2.2(5.7)	1.4(3.5)	11(320)	CALL
IC-T90A	6m/2m/440	13.5 VDC	5.0/.5 W	1.4 A	150 mA	<.16µV	4.8(12.2)	2.3(5.8)	1.1(2.7)	10.9(310)	CALL
IC-T22A	2m	4.5-11VDC	5.0/.5 W	2.0 A	220 mA	<.16µV	3.4(87)	2.3(5.8)	1.1(2.9)	8.4(240)	CALL
IC-V8	2m	7.2 VDC	5.0/.5 W	2.0 A	250 mA	<.16µV	5.2(13.2)	2.1(5.4)	1.4(3.7)	12.3(350)	CALL
IC-V82	2m	7.2 VDC	7.0/4.0/.5 W	2.6 A	250 mA	<.16µV	5.4(13.9)	2.1(5.4)	1.4(3.5)	13.8 (390)	CALL
IC-U82	440	7.2 VDC	5.0/2.0/.5 W	2.0 A	250 mA	<.16µV	5.4(13.9)	2.1(5.4)	1.4(3.5)	13.8 (390)	CALL
IC-W32A	2m/440#	13.5 VDC	5.0/.5 W	1.6 A	210 mA	<.18µV	5.4(13.7)	2.2(5.7)	1.3(3.3)	16 (450)	CALL
IC-F21BR	GMRS/FRS	7.2 VDC	2.0 W	1.6 A	250 mA		5.1 (12.8)	2.2(5.4)	1.5(3.7)	10.6(300)	$159.95
IC-F21GM	GMRS/FRS/BRS	7.2 VDC	4.0 W	1.6 A	250 mA		5.1 (12.8)	2.2(5.4)	1.5(3.7)	10.6(300)	$179.95

* Power with standard battery pack
# Extended receive 118-174 MHz and 400-470MHz
† Frequency coverage 138-174 (receive only outside amateur bands), 440-450 MHz
†† 1.0/0.1W 1.2GHz

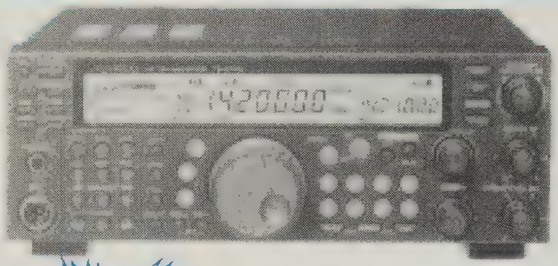
Icom Handheld Accessories

OPTIONS		2 METERS										DUAL and TRI BAND									440 MHZ/GMRS						220 MHZ		
		2SAT	2GAT	2GXAT	2SRA	T2A T2H	T22	V8	V82	02AT	2AT	24AT	V21AT	W2A	W21AT	W31A W32A T7A/H	T8A T81A	T90A	X2A	Z1A	4SAT	4SRA	04AT	F21GM F21BR	U82	4008A	3SAT	03AT	HRO Price
Packs	BP-171						*									*				*									$59.95
	BP-172					*	*									*				*									$69.95
	BP-173					*	*									*				*									$99.95
	BP-180					*	*									*				*									$83.95
	BP-195																												$42.95
	BP-196																												$53.95
	BP-198																												$59.95
	BP-199																												$70.95
	BP-200L																*												$89.95
	BP-202																									*			$17.95
	BP-208N								*																*				$18.95
	BP-209N							*	*															*	*				$53.00
	BP-210N							*	*															*	*				$79.95
	BP-211N							*	*																*				$89.95
	BP-216																*	*											$35.95
	BP-217																*	*											$99.95
	BP-222							*																*					$35.95
Cases	BP-4		*							*	*												*					*	$35.95
	BP-90	*			*							*		*					*		*	*					*		$35.95
	BP-130A			*									*																$35.95
	BP-170						*									*				*									$35.95
	BP-194					*																							$18.95
	BP-197																												$24.95
	BP-208							*																*					$18.95
	CM-12		*							*													*					*	$49.95
Cables	CP-1		1							1	2												1					1	$26.95
	CP-11		3							*	2												*					*	$40.95
	CP-12	*				*						*				*				*	*						*		$36.95
	CP-12L																												$36.95
	CP-13L				*									*					*			*							$40.95
	OPC-254	*				*						*				*				*	*						*		$14.95
	OPC-254L																												$11.95
	OPC-288			*	*								*	*					*			*							$19.95
DC-Cony	DC-1										*																		$40.95
Speaker Mikes	HM-46	*		*		*				*	*	*	*		*	*		*		*	*		*				*	*	$59.95
	HM-46L		*					*																*					$59.95
	HM-54	*		*		*				*	*	*	*		*	*	*			*	*		*				*	*	$79.95
	HM-65				*									*	*				*			*							$61.95
	HM-70				*									*	*				*			*							$66.95
	HM-75					*		*	*				*		*	*	*	*		*				*	*				$79.95
	HM-131L							*	*															*	*				$38.95
Headset	HS-51	*	*	*		*		*		*		4	*		*			*			*		*	*			*	*	$79.95
	HS-85															*	*			*									$84.95
	HS-94								*																*				$24.95
	HS-95								*																*				$190.95
	HS-97								*																*				$40.95
	VS-1L								*																*				$42.95
Mounting Brackets	MB-25		*																										$41.95
	MB-30	*		*	*							*	*	*	*	*			*	*	*	*					*		$29.95
Internal Options	UT-93																			*									$59.99
	UT-94															*													$55.95
	UT-108								*																*				$35.95
	UT-109/110								*																*				$90.95
	UT-114/118								*																*				$329.95
	BA-12	*																			*						*		$29.95

1 For charging BP-3, BP-5A, BP-7, BP-8, BP-70 2 Optional DC-1 is required 3 Optional AD-12 is required 4 Except for full duplex operation

KENWOOD

Digital HF



HRO Discount Price $CALL

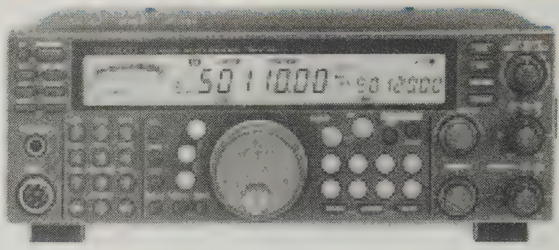
TS-570D(G)

Super Special

The TS-570 HF rig is perfect for base or mobile operation.

- 500 kHz to 60 MHz general coverage receiver.
- Transmit on amateur bands from 160 to 10 meters.*
- Variable transmit output 5 to 100 watts in 5 watt increments.
- 16-bit DSP AF signal processing.
- Large LCD display.
- Alphanumeric sub-display provides menu, mode guidance, split frequency, digital filter selection.
- Full scanning capabilities: variable scan speed. Scan across channels, groups of 10, all except locked out channels, or a frequency range between two channels.
- Enhancement includes noise reduction for CW and SSB, audio equalization, slope tuning and automatic IF filter bandwidth.
- New "soft touch" keys.
- Two antenna ports plus a packet port.
- Automatic antenna tuner.
- 100 memory channels.
- 10 key direct entry.
- 57600 bps PC control.
- Full/semi break-in CW.
- Built-in electronic keyer with 0 to 100 WPM and dual key inputs (for paddle and straight key) and manual weight.
- CW message memory / reverse mode.
- Eleven CW DSP filters.
- CW auto tune mode links with RIT without changing transmit frequency.
- CW auto tune enables automatic zero-beating for CW operation.
- TX sound quality monitor with 9 steps.
- NR1(SSB): operator controlled in 9-steps or automatically tracks signal.
- NR1 and NR2 settings reconfigured automatically when modes change.
- "One-touch" DSP filter wide mode.
- RCP-2 remote control software.
- RS-232 com port.
- Opt. voice synthesizer VS-3.
- Optional filters: YK-88C-1 (500 Hz) and YK-88CN-1 (270 Hz) for CW. YK-88SN-1 (1.8 kHz) for SSB.

Digital HF + 6 Meters



Super Special

TS-570S(G)

$CALL

HRO Discount Price

The TS-570S(G) has all the features of the TS-570D(G) with the addition of 6 meters. Operation on 6M includes the spectacular, built-in DSP system, 100 watts output, and preset auto antenna tuner.

- AF-stage digital signal processing.
- 16-bit AF-stage DSP.
- Adjustable transmit sound quality and NR1 noise reduction.
- Digital filtering with 3 CW DSP filters.
- Compact enough to serve as a mobile unit.
- CW auto tune.
- Compatible with Kenwood's Sky Command System.
- Extensive memory functions – 100 memories, scroll function and 5 quick memories.
- Large LCD display.
- Wide-band receiver covers from 500 kHz to 30 MHz and 50 to 54 MHz.
- PC-control option.

Power Supplies

PS-52

Designed for the TS-850 operating all modes for the rated periods of time. Provides 13.8 VDC at 22.5 A. Has a cooling fan and protection circuits. **HRO Price 279.95**

PS-53

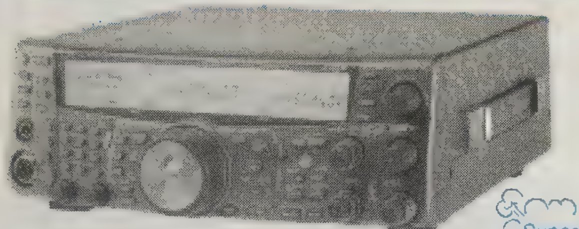
Designed for the TS-570 D/S(G), TS-480 series and TS-2000 operating all modes for the rated periods of time. Provides 13.8 VDC at 20.5 A. Has a cooling fan and protection circuits. **HRO Price $269.95**

Kenwood HF Specifications

Model	Receiver Frequency Range	Power Supply		Current Drain		Power					FSK Shift	Mike Z ohms	Receive Circuitry	Sensitivity	RIT / XIT	Notch Filter	Audio
		50/60 Hz AC	DC	Xmit	Rec	AM	FM	SSB	CW	FSK							
TS-2000*	0.5-30 MHz, 50-54 MHz, 144-138 MHz, 430-450 MHz, 1240-1300		13.8 V	20.5 A	2.0 A	100	100	100	100	100	100	600	Quadruple Conversion	<.11µV SSB,CW,FSK (varies with band and mode)	±20 kHz	> 30 dB	
TS-570D(G)	500 kHz - 30 MHz		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	500 - 50 k	Double Conversion	<.4µV SSB,CW,FSK	±9.99 kHz	–	1.5 W
TS-570S(G)	500 kHz- 30 MHz, 6M		13.8 V	20.5 A	2.0 A	25	100	100	100	100	(1)	500 - 50 k	Double Conversion	<.4µV SSB,CW,FSK	±9.99 kHz	–	1.5 W
TS-480SAT†	500 kHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< .2 µV	±9.99 kHz	–	2 W
TS-480HX	500 kHz - 60 MHz		13.8 V	41.0 A	1.5 A	50	200	200	200	200		600	#	< .2 µV	±9.99 kHz		2 W
TS-60S	50 - 54 MHz		13.8 V	20.5 A	2.0 A	25	90	90	90	N/A	170 Hz	600	#	< .25 µV	>±1.1 kHz	–	2 W

# Double Conversion SSB, CW, AM; Triple FM (1)170,200,425,850 Hz *Output440MHz 50 W and 1000 MHz 10 W †Output 6M 480HX - 100W/50W AM 480AT 50W/25 W /

All-Mode / All-Band



TS-2000
$CALL – HRO Price

Super Special

TS-B2000
$CALL – HRO Price

The TS-2000 is a marvel of electronic engineering. Kenwood's stylish all-mode multibander is packed with top-end features yet compact enough to use at home, in your car, or on a DX'pedition. With a 3D front panel featuring backlit keys and a large amber display, its appearance is as distinctive as its performance. The TS-B2000 is a "Black Box" version for computer control or vehicle use with the optional RC-2000 mobile controller. ARCP-2000 radio control software is supplied with the TS-B2000.

- All mode multibander: HF*/50/144/440/1200 MHz (optional UT-20 required for 1200 MHz operation on the TS-2000).
- 500 kHz to 1300 MHz wide band receiver with dual-channel receive. Has satellite mode plus a sub 144/440 MHz FM/AM receiver so two frequecies can be received simultaneously.
- The high-duty transmitter provides 100 watts on HF/50/144 MHz bands (AM 25 watts). There is 50 (AM 12.5) watts on 440 MHz. For 1200 MHz operation, the unit delivers 10 (2.5 AM) watts.
- Digital signal processing combines IF-DSP with AF-DSP (sub band) to provide precision filtering and interference reduction.
- The IF digital signal processing provides for DSP detection, digital filtering, IF auto notch and IF AGC. The AF digital signal processing features an automatic beat cancel, a manual beat cancel, CW auto tune, two types of Noise reduction and TX audio shaping.
- High speed processing using two 16-bit DSP chips, double precision computing and a 100 MHz CPU and 24-bit A/D and D/A converters to provide quick response.
- Satellite communications uses main-band circuits which benefit from the IF-DSP.
- The Kenwood Skycommand System II Plus is built-in allowing the transceiver to be operated remotely with one handheld transceiver.
- High frequency stability is obtained with a built-in TCXO with professional performance ±0.5 ppm (-10 to 50 degrees C).
- Optional mobile controller and optional control software allows for remote and computer controlled operations. Has a built-in auto antenna tuner, DX cluster tune and an antenna terminal dedicated to HF low-band operation.
- The TNC is compliant with he AX.25 protocol for Sky Command and DX cluster tune.
- The TS-2000 has other expanded power and performance features.

* Not 60m

HF Accessories

Option		Model	950 SDX	940S	930S	850S	870S	570D 570S	450S 690S	440S	430S	140S 680S	480	50S	60S	HRO Discount Price
Microphone	**Hand**	MC-43S	std	std	std	std		*	std	std	std		*	*	*	$59.95
	Hand	MC-47						*					*	std	std	$59.95
	Desk	MC-60A	*	*	*	*		*	*	*	*		*	*	*	$139.95
	Desk	MC-80	*	*	*	*		*	*	*	*			*	*	$109.95
	Desk	MC-90	*					*								$249.95
Filters	**500Hz CW**	YG-455C-1	std	*	*	*			*				*			$149.95
	500Hz CW	YK-88C-1	std	*	*	*		*	*							$129.95
	270Hz CW	YK-88CN-1	*			*		*	*							$129.95
	1.8kHz SSB	YK-88SN-1	*			*		*	*							$129.95
	500Hz CW	YK-107C												*	*	$129.95
Hi Stability Oscillator		SO-2	std			*		*	*					*	*	$169.95
		SO-3											*			$109.95
Headphones		HS-5	*	*	*	*	*	*	*	*	*		*			$79.95
		HS-6	*	*	*	*	*	*	*	*	*		*			$59.95
External Speaker		SP-31				*										$99.95
		SP-50B						*		*	*		*	*	*	$55.95
		SP-23						*	*				*			$76.95
		SP-950	*													$139.95
Voice Synthesizer		VS-2	*			*			*							$69.95
		VS-3						*								$39.95
Antenna Tuner		AT-50												*		$309.95
Mobile Mount		MB-13												*	*	$55.95
		MB-430						*	*	*	*					$49.95
Power Supply		PS-40												*	*	$199.95
		PS-52				*										$279.95
		PS-53						*	*				*	*	*	$269.95
Voice Memory		DRU-2	*			*										$134.95
		DRU-3A						*								$129.95
		VG-1											*			$69.95

KENWOOD

HF Mobile

HRO
Discount Prices
$CALL

TS-480HX
TS-480SAT

Compact, Portable HF Transceiver

With its separate control panel, the TS-480 is perfect for base station use, while ample receive audio makes it outstanding for mobile applications. Using 13.8V for power, the TS-480HX delivers 200W; the TS-480SAT delivers 100W. The TS-480SAT also has an automatic antenna tuner.

- 500 kHz–60 MHz general coverage receiver.
- Separate LCD control panel with speaker. It can be positioned up to 4 meters from the main unit.
- TX/RX AF DSP. 16-bit AF digital signal processing offers noise reduction, TX/RX equalizer and AF filters.
- TX covers all amateur bands 1.8 MHz to 60 MHz. Includes 5 MHz band for the US market.
- Quad-mixer provides RX dynamic range in the TS-950 class.
- PSK-31 compatibility.
- Packet cluster tune with optional TM-D700E/A.
- PC-based control.
- Optional IF filers available.

Single Band

TM-271A

2 Meters

$CALL HRO Discount Price

On or off road, the TM-271A delivers powerful mobile performance with 60 W maximum output. The TM-271A is a tough, rugged unit meeting MIL-STD 810 C/D/E/F specifications. It features weather alert (US only), 200 memories plus call channel, multiple scan functions, CTCSS (42 subtones) and DCS (104 codes) encoder/decoder built-in, illuminated keys and large LCD with adjustable green backlighting, automatic repeater offset, memory channel lockout, memory control program.

Kenwood VHF / UHF Specifications

Model	DC Power Suppl	Current Drain		Output Power	Sensitivity	HRO Price
		Transmit	Receive			
TM-271A	13.8 V	13 A	1.2 A	60 W	<.16 µV	CALL
TM-G707A	13.8 V	11.5 A	1.2 A	50W/35W	<.16 µV	CALL
TM-V7A	13.8 V	11 A	0.6 A	50W/35W	<.16 µV	CALL
TM-D700A	13.8 V	11.5 A	1.0 A	50W/35W	<.16 µV	CALL
TM-V708A	13.8 V	11.5 A	1.0 A	50W/35W	<.16 µV	CALL
Frequency Modules						
UT-50S*		11.5 A	1.2 A	50 W	<.16 µV	$339.95
UT-220S*		7 A	1.2 A	25 W	<.16 µV	$339.95
UT-1200*		6.5 A	1.2 A	10 W	<.16 µV	$399.95

† 220 MHz

*These modules used by TM-641, TM- 642, TM-942, TM-741A and TM 742 also. Limited supply available.

Kenwood VHF Accessories

Option	Model	211A 411A	221A 321A 421A 521A	231A 331A 431A 531A	241A 441A 541A	251A 451A 551A	255A 455A	261A 461A	711A 811A	751A 851A	2530A 2550A 2570A	4100 A	621A 721A	631A 731A	732A	733A	642A 742A	641A 741A	941A	V7A	HRO Price
Microphone Hand	MC-43S	*	*	*					*	*	*	*	*	*							$59.95
Hand .	MC-52DM			*	*																$79.95
Hand .	MC-53DM					*	*	std								*	std			std	$79.95
Desk .	MC-60A	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*		*	$139.95
Desk .	MC-80	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	$109.95
Modular Plug Adapt	MJ-88							*													$32.95
External Speaker	SP-50B	*	*	*	*			*		*	*	*	*	*	*			*	*	*	$55.95
Voice Synthesizer	VS-2											*									$69.95
	VS-3																			*	$39.95
Noise Filter	PG-3B	*	*	*	*			*		*	*	*	*	*	*		*	*	*	*	$29.95
Tone	TU-7									*	*	*									$54.95
	TSU-5		*																		$59.95
	KQT-8			*	*								*	*							$49.95
	TSU-7														*		*	*	*		$59.95
	TSU-8						*	*							*		*	*	*		$59.95
Mobile Mount	MB-201		*	*	*			*							*					*	$25.95
Power Cable	PG-2N	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	$17.95
Data Cable	PG-5A																			*	$15.95
Extension Cables	DFK-3C																*			*	$44.95
13' .	DFK-4C																*			*	$64.95
22' .	DFK-7C																*			*	$99.95

2 m / 70 cm Dual Band

HRO
Discount Price
$CALL
Super
Special

TM-G707A

This dual bander has been specifically designed for ease of use while mobile. The extra large amber display has a four step dimmer for easy viewing in all lighting conditions.

- Simple operation. Programmable memory system stores five operating profiles with recall by pushing just one button.
- 180 memory channels with Memory Name Function which identifies each channel with up to 7 alphanumeric characters.
- Multiple scan functions include priority and CTCSS tone.
- Built-in duplexer.
- Memory shift for odd splits and auto repeater offset (2m).
- PC programmable w/PG-4S.
- Built-in CTCSS encoder/decoder.
- Packet ready for 1200/9600 BPS packet including front panel connector.
- MC-53DM multi-function backlit mike with DTMF.
- Optional quick release detachable front panel.

HRO
Discount Price
$CALL
Super
Special

TM-V7A

Limited quantities available

The TM-V7A is easy-to-operate with its cool-blue display modes. GREAT for APRS.

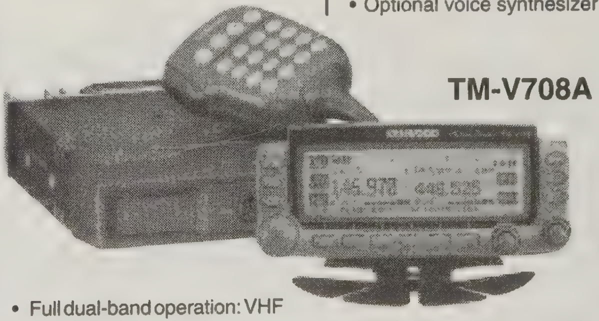
- Simultaneous receive on VHF and UHF plus simultaneous receive of two frequencies on the same band, voice and data.
- 50 watts output on 2 meters (144–148 MHz), 35 watts output on 70 cm (438 – 450 MHz).
- Five-in-one programmable memory. Five different operating profiles,
- Multiple scan functions and tone scan.
- Voice synthesizer (with optional VS-3).
- Built-in duplexer.
- Visual scan with pause.
- 280 memory channels (180 when using Memory Name Function which identifies each channel with up to 7 alphanumeric characters.).
- Built-in CTCSS encoder/decoder.
- Packet ready for 1200/9600 BPS. Includes front panel connector.
- MC-53DM multi-function backlit mike with DTMF.
- Programming software with optional PG-4S..
- Optional quick release detachable front panel (DFK-4C 13' and DFK-7C 22' cables).

HRO
Discount Price
D700A $CALL
Super
Special

TM-D700A

Kenwood continues to provide advanced APRS™ ham radio equipment in the TM-D700A mobile transceiver. For current owners of the TH-D7A handheld with built-in TNC and APRS™ software, the TM-D700A offers even more features and versatility. The TM-D700A is unlike any other dual-band mobile radio Kenwood has ever produced. The control head is detached and comes with remote cable for easy installation. The radio also incorporates a 9-pin PC connection for easy hook-up to program frequencies and other APRS™ mapping programs. Your TM-D700A is a full dual-band operation radio so VHF+VHF/VHF+UHF/UHF+UHF operation is possible. Full digipeater functions allow anyone to set up a digipeater location wherever needed to help fill in APRS™ nationwide network. Internet gateway operation is also possible for world-wide text communication over VHF.

- Output 50 W VHF; 35 W UHF.
- Receives 118-1300 MHz (cellular blocked).
- Full dual-band operation.
- Alphanumeric dot-matrix LCD amber display.
- Easy-to-use menu system.
- 200 memories.
- Built-in 1200 / 9600 bps TNC.
- Advanced APRS features.
- Satellite packet ready.
- DX packet cluster.
- PC programmable w/ PG-4S.
- Remote head installation only (kit included).
- Tone frequency scan.
- Visual scan.
- Backlite microphone with alphanumeric input.
- Wireless remote control.
- SkyCommand II control.
- SSTV control.
- Digital code squelch (DCS) with frequency ID scan.
- Digipeater operation.
- GPS / VC-H1 / PC port.
- Optional voice synthesizer.



TM-V708A

- Full dual-band operation: VHF x VHF/ UHF x UHF.
- Dual Receive.
- 200 memory channels with 8-character memory name input.
- Up to 10 programmable memory scan banks.
- Programmable memory (PM) available for selection/storage of 5 operation profiles.
- DCS code scan, TONE, CTCSS scan.
- Remote panel installation only (extension cable and panel holder supplied).
- Extra-large (188 x 54 dots) backlit LCD & multifunction key display (reversible).
- Visual band scope Advanced Intercept Point (VHF band).
- Key operation announcement with optional VS-3 voice synthesizer.

KENWOOD

HANDHELDS

Dual Band

HRO
Discount Prices
G71A-HP--
$CALL

TH-G71A-HP

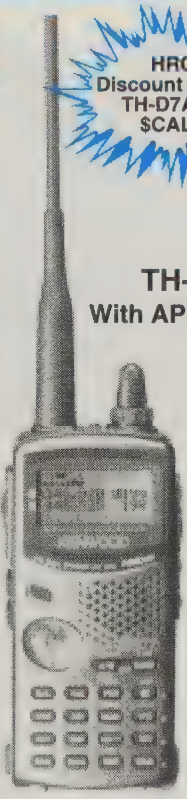
Looking for a compact, high performance 2 m / 70 cm dual-bander with an affordable price tag? The TH-G71A is the right rig. It fits easily in the palm of your hand.

- Backlit keypad.
- 6 watts (VHF), 5.5 watts (UHF) at 13.8 VDC.
- PC programmable with 200 memories with optional PG-4P.
- CTCSS tone scan.
- Wide frequency coverage including aircraft.
- DTMF memory.
- TM-V7A remote control (DTMF remote).

HRO
Discount Prices
TH-D7A(G)
$CALL

Super
Special

TH-D7A(G)
With APRS Operation



Kenwood's deluxe dual band handheld features Automatic Packet Reporting System.™ APRS allows you to track mobile stations on a map on a computer screen. The TH-D7A(G) includes a 1200 / 9600 built-in TNC and a program for dealing with date formats supported by APRS.

Its display shows information each time correct APRS data is received; you do not need a computer. If you do not have a GPS receiver, you can manually enter your position. The TH-D7A(G) has jacks to connect to your computer and to a GPS receiver.

- 2m / 440 MHz dual-band.
- Backlit Keypad.
- Aircraft receive and dual receive on same VHF band for voice and data.
- Call channel and CTCSS.
- 3 scan modes and 200 memories.
- DX packet cluster monitor.
- Wireless remote control.
- 16 digit, 10 DTMF autodial memories.
- VC-H1 messaging control.
- Large (12 digits X 3 lines) dot-matrix LCD.

Single Band

HRO
Discount Prices
TH-K2AT
$CALL

TH-K2AT
2m

Also
TH-K2ATK2
Drycell
Version

The 2-meter handheld is PC programmable. It also includes:

- 5W RF output.
- Large LCD panel & baclit keys.
- Internal Vox.
- Wether alert/RX.
- Automatic Simplex Checker.
- Auto repeater offset.
- Multiple scan functions.
- Priority scan.
- Built-in CTCSS, DCS and 1750 HZ tone burst.
- Meets MIL-STD-810 standards for resistance to rain, vibration, schock and humidity.
- High-gain antenna.
- More receive audio than most other handhelds on the market.

Tri Band

TH-F6A
Tri-Band
2 m / 220 Mhz / 70 cm

Super
Special

$CALL
HRO Price

The TH-F6A has a dual personality: it's a 3-band transceiver and also a wide-band (0.1-1300 MHz*) receiver. In addition to FM / FMW / FMN / AM and SSB / CW, the receiver has a special weather channel mode.

It can receive 2 frequencies simultaneously, even on the same band. The rig features 435 memories including 3 call channels and another 20 for programmable scan. The HT comes equipped with a 7.4 volt 1550 mAh lithium-ion battery providing 5 watts output. ease of operation is achieved with a multi-scroll key that can be rocked up and down (frequency), left and right (band) with the thumb. Has a 16-key pad for direct entry, menu-driven interface, key illumination and backlit LCD display. Includes memory shift, key lock, time-out timer, wireless remote control.

*Cellular frequencies blocked

Handheld Battery Packs / Chargers

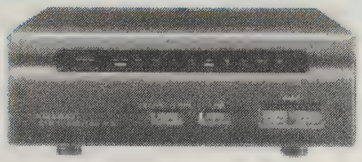
Battery	Voltage	Rating MAH	Desk Charger	Radio Series	HRO Price
PB-32	6	600	KSC-14	TH-22AT/ 42AT/79A	$66.95
PB-33	6	1200	KSC-14	TH-22AT/ 42AT/79A	$79.95
PB-34	9.6	600	KSC-14	TH-22AT/ 42AT/79A	$89.95
PB-43N	7.2	1100	KSC-24	TH-K2AT	$49.95

Kenwood Handheld Specifications

Model	Freq Range	Power Supply	Power Out	Current Transmit	Current Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Discount Price
TH-K2AT	144-148 MHz	6-16 VDC	5 W	1.8 A	30 mA	<.13 µV	4.4 (11.2)	2.3 (5.8)	1.5 (3.5)	11.3 (320)	CALL
TH-F6A	144/220/440MHz	5-7.5VDC	5 W	2.0 A	35 mA	<.13 µV	3.4(8.7)	2.3(5.8)	1.2(3.0)	8.8 (250)	CALL
TH-G71A-HP	2m & 440 MHz	6 VDC	5 W	1.2 A	70 mA	<.18 µV	4.4 (11.2)	2.1 (5.4)	1.3 (3.3)	11.6 (330)	CALL
TH-D7A (G)	2m & 440 MHz	6 VDC	5 W	1.8 A	45 mA	<.18 µV	4.75(11.9)	2.25(5.4)	1.5(3.5)	12.0(340)	CALL

† Higher power output with optional batteries.

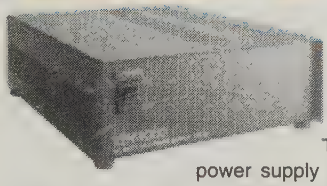
Antenna Tuner



AT-50

A fully automatic antenna tuner to use with the TS-50 and other 100 watt HF transceivers. Mobile or fixed operation. Can be installed remotely. **HRO Price $339.95**

Power Supply



KPS-15

HRO Discount Price $159.95

The KPS-15 switching power supply is rated at 23 amps and similar in size to the TS-50. The supply is for 110-230 VAC. Weighs only 4.5 pounds. **Suggested List Price $229.95**

Kenwood Power Cables

Part Number	Radio	HRO Price
PG-2Z	TS-140, 690, 790, 450, 850, 130, 440, 570	$37.95
PG-2N	TM-2530/ 50/ 70, 721, 621A, 221/ 321/ 421, 241, 231/ 431/ 531, 251/ 451/ 551, 255/ 455, 261/ 461, 441, 201B, 401B, 541, 631, 642A, 731, 741, 941, 732A, 733A, 642A, 742A, 942A, TR-751A	$17.95
PG-2W	TH-26, 46, 28, 48, 79, 235A	$17.95
PG-2Y	TS-50S/60S	$39.95
PG-3J	TH-22AT, 26, 27, 46, 47, 79A, 235A, F6A	$37.95

Family Radio Service

Free Talk™ XLS

$169.95
HRO Price

This black 7-ounce radio has 15 GMRS channels with channel scan and 121 sub-channels / privacy tones (38 conventional QT tones and 83 DQT tones).

The handheld comes with a rapid rate desktop charger and spring loaded belt clip.

- Vibration and tone alert.
- Voice scrambler.
- Six call tones.
- 2-channel operation with channel scan.
- Voice activated transmit with optional headset.
- LCD battery meter and low battery alert.
- Over 10 hours of use on a battery charge.
- Optional operation with AA alkaline batteries.

HRO
Discount Price
$84.95

Free Talk™ UBZ- LH14

$CALL

This Free-Talk™ FRS handheld offer a professional-style design for busy outdoorsmen, providing the ultimate way to keep in touch. The radio has the same voice scrambling technology used by law enforcement agencies. Available in black or yellow. Specify color when ordering.

- 14 selectable UHF channels.
- 2 digit LCD backlit display.
- Low battery alert.
- Moisture proof.
- Built-in belt clip.
- Up to 30 hours of operation with alkaline cells and up to 2 miles range.

AREC-Kit

Portable Emergency Kit

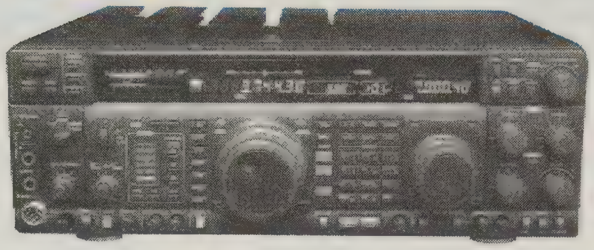
Kenwood's concept in disaster communications is the **AREC-Kit** designed for instant set up and use in the most extreme field conditions. Includes six TH-G71A HT's, a TM-V7A and two FreeTalk™ HT's plus many accessories needed in field conditions. Contact your nearest HRO for more details.

Suggested List Price: $7800.00

Kenwood Handheld Options

Option	Model	K2AT	22AT 42AT	26AT 46AT	27AT 47AT	28A 48A 78A	25AT 45AT 75AT	77A	79A (D)	215AT 315AT 415AT	225 AT	235	2600A 3600A	HRO Price
Headset	HMC-3	*	*	*	*		*	*	*	*	*	*		$59.95
	EMC-3	*										*		$29.95
	KHS-21	*												$40.95
Speaker Mike	SMC-32	*	*	*	*	*	*	*	*	*	*	*	*	$52.95
	SMC-33	*	*	*	*	*		*	*			*		$65.95
	SMC-34	*	*	*	*	*		*	*			*		$39.95
Prog. Tone Decoder	KQT-8						*							$49.95
	TSU-7			*		std								$59.95
	TSU-8		*											$59.95
DC/DC Converter	PG-2W	*	*		*	*						*		$17.95
Filtered Lighter Cord	PG-3J	*			*			*				*		$37.95
Base Quick Charge	KSC-14		*						*			*		$87.95
	KSC-24	*												$59.95
Programming Cable	PG-4Y	*												$34.95
Battery Case	BT-9		*						*					$29.95
Wall Charger	BC-17		*											$29.95
	BC- 21	*												$22.95

YAESU HF TRANSCEIVERS



Super Special

FT-1000MP Mark V–Choice of DXers

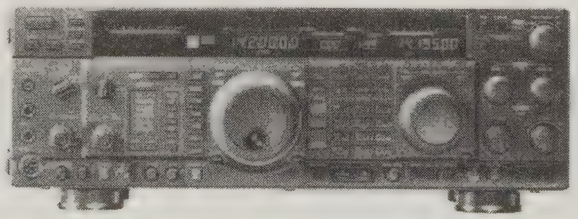
$CALL – HRO Discount Price

The FT-1000MPMKV HF transceiver works in all modes–SSB, CW, FSK, AM, FM, Packet– but is optimized for digital. Enhanced digital signal processing (EDSP) provides four random-noise reduction settings, selectable bandpass filtering with adjustable low and high cut responses, and transmitted audio enhancement. An automatic seeking EDSP notch filter identifies and eliminates interfering heterodynes and carriers in the passband.

Two VFO knobs allowing individual adjustments to the main and sub VFOs provide in-band dual receive, even on different modes and bandwidths. Shuttle-jog™ tuning enhancement allows quick QSY up or down the band. Direct digital synthesizers (DDS) provide 13 extremely fine tuning steps, selectable down to 0.625 Hz per step. A full-featured contest memory keyer provides CQ message generation along with contest numbers.

Built-ins: a lightweight switch-mode AC power supply and a high-performance high-speed automatic antenna tuner, with 39 frequency information memories.

- General coverage receiver 100 kHz to 30 MHz.
- Power output 200 watts PEP; class-A power amp operation at 75 watts.
- Dual in-band receive; separate S meters.
- CAT system capability with built-in RS-232C level converter.
- Collins mechanical filters: 455 kHz / 2.75 kHz SSB built in. A 455 kHz / 500 Hz CW is optional.
- Interlocked digital bandwidth tracking system (IDBT).
- Wide receiver dynamic range with separate, optimized FET RF preamps for high and low bands.
- Multi-function shuttle jog dial.
- Variable RF front-end filter.
- Transverter jack for VHF/UHF operation (display shows actual frequency).
- Selectable antenna jacks. Separate receive-only antenna jack included.
- Custom configuration via new menu system.
- Quick memory bank (QMB) system for instant recall of important memories.

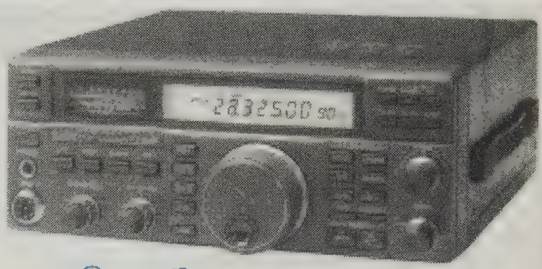


FT-1000MP Mark V Field

$CALL – HRO Discount Price

Building on the success of the FT-1000 Elite-Class of HF Transceivers, the Field brings you leading edge technology in 100-watt self-contained transceiver design. The Field features a built-in power supply and automatic antenna tuner.

- AC/DC operation.
- High efficiency cooling.
- High speed automatic antenna system.
- Dual receive with independent AGC systems.
- Enhanced digital signal processing.
- Selectable SSB pattern contour filters.
- Industry-leading RF front end design.
- Full break in CW and electronic keyer.
- Three RF preamp modes plus IPO (direct mixer feed).
- Outstanding IF filter chain.
- Multifunction display with improved contrast.
- Enhanced shuttle jog tuning dial.
- Direct keypad frequency entry.
- Twin stacked VFO registers.
- Easy digital interfacing.



Super Special

FT-840

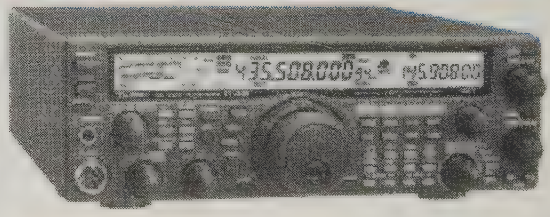
$CALL

HRO Discount Price

The FT-840 is a mobile or main station transceiver with high-tech performance and a wealth of features at an affordable price. The LCD display gives sharp visibility in bright sunlight. Die-cast heat sink and internal thermally switched fan keep it running cool. Modular design circuit boards ensure operating efficiency.

- General coverage receiver 100 kHz to 30 MHz with a low noise front end with FET RF amplifier.
- Transmit on amateur bands 160-10 m.*
- Direct digital synthesis (DDS).
- FM repeater operation with automatic 10 meter repeater offset.
- Twin band-stacking VFOs .
- IF shift.
- 100 memories (independent transmit / receive per memory).
- Selectable CTCSS encode with optional FM-747.
- CW reverse feature.
- Choice of two optional antenna tuners: FC-10 Matching External Tuner or FC-800 External Remote Tuner.

HF Plus



HF + 6m + 2m + 400 MHz

All Mode FT-847

$CALL

HRO Discount Price

Super Special

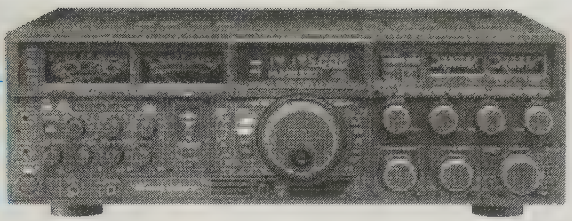
The all-purpose, all-mode FT-847 is ideal for satellite operation and packet (1200 / 9600 bps packet ready). Includes normal/reverse tracking and dedicated satellite memories. CW has sidetone and pitch control.

- Crossband full duplex operation.
- 100 watts output on HF*/ 6m; 50 watts on 2m / 430 MHz.
- DSP filters: notch, noise reduction, band pass.
- Direct frequency keypad entry.
- High resolution 0.1 Hz tuning steps for ultra-smooth tuning.
- Shuttle jog tuning dial.
- Built-in CTCSS/DCS encode/ decode.
- Built-in low noise VHF/ UHF preamps.
- 13.8 VDC.

* Not 60m

NEW!

The rebirth of the renowned FT DX series



FT-DX9000 – $CALL

FT-DX9000 Contest Shown

The FT DX 9000 has the electronic DNA from the FT-1000D, but it has advanced far more than just one generation. The only HF/50 MHz transceiver capable of cross-band full duplex operation (for one-box SO2R contest operating), the identical dual receivers feature unmatched real-world, close-in dynamic range, selectable (15/6/3 kHz) roofing filters, and superb filtering thanks to the 32-bit IF DSP. On transmit, the industry's only 3-band parametric microphone equalizer yields superb SSB audio, and the FT DX 9000D's TFT display provides a two-band spectrum scope, world clock with sunrise/sunset illumination, rotator control page for Yaesu G-800/1000/2800DXA rotators, an audio scope/oscilloscope page with waterfall display, and much, more. Three FT DX 9000 configurations are available:

FT-DX 9000MP – 400 Watts output; external switching power supply with twin speakers and audio filters; LCD display plus four analog meters; flash memory card to store configuration and log data; full dual receive (identical receivers) for SO2R; and main and sub receiver VRF preselectors.

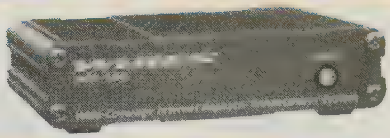
FT-DX 9000D – 200 Watts output; 6.5" TFT display plus two analog meters; flash memory card for configuration and logging data; Very-High-Q "µ-Tune" narrow-band preselector modules for 160-20 M (main receiver) plus VRF for both receivers; full dual receive for SO2R; internal switching supply.

FT-DX 9000 Contest – 200 Watts output; LCD display plus four analog meters; single receiver with VRF; internal switching supply; extra key and headphone jacks. Second RX, VRF/µ-Tune modules, and data management unit (to enable external monitor) are optional and may be added.

- HF + 50 MHz.
- Four TX / RX antenna jacks; two RX in / out BNC jacks; one SO239 RX antenna jack.
- PS/2 & USB keyboard connectors.
- Data port for PC connection.
- Direct frequency entry.
- One-touch band change.
- One-touch "Narrow" DSP filter selection.
- Class-A with continuous A1AB bias control.
- Rotator interface jack for direction indication and control (TFT-equipped models).
- Direct input/output sound card connections.
- Order rig from HRO; add options for direct shipment from Yaesu/Vertex Standard headquarters after performance verification at factory.

Wires-II

HRI-100 Interface Box



Give your repeater worldwide coverage with the Wires-II Internet repeater enhancement system

Wires™-II uses DTMF signaling to establish a bridge via the Internet from your repeater or home station to another WIRES™-II equipped station anywhere in the world. No proprietary tones are used, so any manufacturer's radio (equipped with a DTMF encoding keypad) may be used to bring up the Internet link.

At the repeater site, a PC is connected to the HRI-100 Wires™-II interface box which serves as a command and audio-patching controller. Use either a dial-up or high-speed line for Internet connection.

Wires™-II may be configured to allow on-the-fly selection for linked or non-linked communications. Wires™-II uses voice recording technology as a buffer and will never interrupt a conversation in progress on a distant repeater.

Wires™-II provides two operating network concepts. Up to 10 repeaters and/or home stations may join to form a "Sister Radio Group" for closed network operation. The Wires™-II server also maintains a worldwide listing of repeaters operating in the "Friends' Radio Group" mode that may be contacted using a 6 digit DTMF string to establish a link.

The Wires™-II kit includes: AP01 CD-ROM, power cable, data cable (RS-232 DB-9 plug), data cable (8-pin Mini-DIN plug), two audio cables (3.5 mm plug) and the Wires™-II User/Server Agreement. **HRO Price $149.95**

Linking system requirements are:

- Wires™-II kit.
- Transceiver or repeater (with standard PKT jack recommended).
- Intel® MMX 200 MHz or faster processor.
- Internet connection (56 kbps modem if dial-up connection is used).
- Microsoft® Windows® 98 SE or later operating system.
- 30 MB of available hard disk space, 64 MB or more of RAM, CD-ROM drive for installation, 640 x 480 color display with 256-bit color support.
- Sound card with 44.1 kHz sampling rate (some sound cards may not work).

Yaesu HF Specifications

		Power Supply		Current Drain		Power Output									
Model	Frequency Range	AC	DC	Xmit	Rec	AM	FM	SSB	CW	Mike Z ohms	Receive Circuitry	Sensitivity †	RIT/XIT Range	Audio Output	HRO Price
FTDX9000MP						100 W		400 W	400 W						CALL
FTDX9000D						75 W		200 W	200 W						CALL
FTDX9000Contest						75 W		200 W	200 W						CALL
FT-1000MPMKV	50kHz - 30 MHz		13.8 VDC			25 W	200 W	200 W	200 W	500-600	Triple	< .25 µV	±300 Hz	1.5W	CALL
FT-1000MKV Field	100kHz -30MHz	117/234	13.8 VDC			25 W	100 W	100 W	200 W	500-600	Quad	< .25 µV	±9.975 kHz	2 W	CALL
FT-897D	100 kHz - 30 MHz, 50-54 MHz, 144-148 MHz, 430-450 MHz	117/234	13.8 VDC			20 W (batt)* 100 W+	20 W (batt)* 100 W +50 W@ 20W%	20 W (batt)* 100 W +50 W@ 20W%	20 W (batt)* 100 W+						CALL
FT-840	100 kHz - 30 MHz		13.8 VDC	20 A	1.2 A	25 W	100 W	100 W	100 W	500-600	Double	< .25 µV	±1.25 kHz	4 W	CALL
FT-847	100 kHz - 30 MHz, 50-54 MHz, 144-148 MHz, 430-450 MHz		13.8 VDC	22 A	2.0 A	25 W 12.5 W 2m/70cm	100 W!	100 W!	100 W!	200-10K	Double	< .25 µV	±9.99 kHz	1.5 W	CALL
FT-817ND	100 kHz – 56 MHz; 76 – 154 MHz; 420 – 470 MHz.		13.8 VDC			1.5 W	5 W	5 W	5 W						CALL
FT-857D	See page 24		13.8 VDC	22 A	1 A	25 W 12.5 W 2m 5w 70cm	100W 50W 2m 20 W 70cm	100W 50W 2m 20 W 70cm	100W 50W 2m 20 W 70cm	200-10K	Double	< .2 µV	±9.99 kHz	2.5W	CALL

† Sensitivity measurements for 1.8-30 MHz SSB,CW *Optional module required @2m %70cm *HF-6M battery +HF-6M AC/13.8VDC

The Smallest HF + 6m + 2m + 70cm

Optional Remote Head

FT-857D

$CALL

HRO Discount Price

Now with DSP-2 Built-in

The world's smallest HF/ VHF / UHF mobile transceiver provides base station performance from an ultra-compact package. Wide frequency coverage, outstanding receiver performance, and the convenience of remote-head operation (requires the optional YSK-857 separation kit) make the FT-857 ideal for mobile or external battery portable work.

The rig's rugged power amplifier uses bipolar transistor devices to provide low noise, low distortion and high reliability. On HF and 6 meters there is 100 watts output. On 2 meters there is 50 watts and 20 watts on 70 cm. Transmitter reliability is assured due to an extensive cooling system with a thermostatically-controlled fan and aluminium diecast chassis.

The FT-857 receiver front-end has a very low noise floor and wide dynamic range. It has a double conversion superheterodyne system (single on WFM) with the second IF at 455 kHz. It features extensive bandpass filtering and careful device selection and gain distribution to handle the strong signal challenges of today. On VHF and UHF, the very low noise MOSFET preamplifier and active DBM mixer yield a low noise figure for working weak signals and rejecting intermodulation.

- Receive coverage 100 kHz to 56 MHz, 76-108 MHz, 420-470 MHz. Now includes 60m
- Transmits 160-6m, 144-148 MHz, 430-450 MHz and 5167.5 kHz (Alaska emergency frequency on USA version).
- SSB, CW, AM, FM, packet (1200/9600 bps) operation.
- Power out: 100 W (160-6 m), 50 W (2 m), 20 W (70 cm).
- DSP bandpass filter, DSP auto-notch filter, DSP noise reduction and DSP microphone equalizer.
- VHF / UHF features: versatile tone control selections, automatic repeater shift, Smart Search™, Spectrum Scope and ATS™.
- Big-radio tuning dial and outstanding ergonomics.
- Easy-to-use "Scrolling Front Panel" keys allow adjustment of several transceiver functions during use.
- DXer features include IF shift, IF noise blanker, intercept point optimization, adjustable AGC, clarifier (RIT). RF gain control and VOX.
- CW features: built-in electronic keyer, CW message memory with beacon mode, CW pitch/sidetone control, and CW trainer.
- Easy data mode set-up for operation on 1200/9600 bps FM packet, RTTY, SSTV or PSK31. Has a rear panel 6-pin mini-DIM connector for each connection of these modes.
- Versatile memory system with up to 200 main memory channels: Each may be named with alphanumeric labels of up to 8 characters. Memories can be separated into 10 groups with 20 memories each. You get a "Quick Memory" and "Home Channel" for each band.
- The large multi-color display provides easy-to-read indications of many operating functions.
- Battery voltage meter, TX meter selection, two antenna connectors, TX / RX status LEDs, versatile scanning features. auto power off, time out timer and CAT system.

Options include:

- ATAS-120: Active Tuning Antenna System provides a compact automatically adjusting antenna for mobile, portable or apartment / balcony use. Designed for use on the 7 / 14 / 21 / 18 MHz amateur bands. Can be used fully retracted on the 50 / 144 / 430 MHz bands. **HRO Price $349.95**
- Collins® Mechanical Filters:
  YF-122S 2.3 kHz SSB
  YF-122C 500Hz CW
  YF-122CN 300Hz CW
  HRO Price each $169.95
- YSK-857 Separation Kit
  HRO Price $169.95
- TCXO-9 High Stability Reference Oscillator. **HRO Price $95.95**

5 Watt Backpack HF Plus

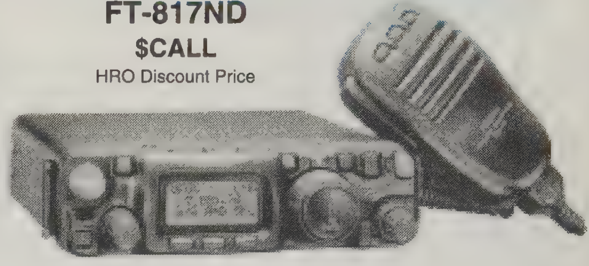
Now with FNB-85 battery
1400 mah NiMh
+ NC-72B Charger

Super Special

FT-817ND

$CALL

HRO Discount Price



- Product concept: fully self-contained battery-powered low-power amateur transceiver for portable, camping, or mountain use. Now includes 60m.
- Transmits on: 160-10 m,* 50 / 144 / 430-450 MHz, plus Alaska Emergency Channel (5167.5 kHz).
- Receives: 100 kHz-56 MHz; 76-154 MHz; 420-470 MHz. (Exact frequency range may be slightly different.)
- Operating modes: USB, LSB, CW, AM, FM, WFM, digital (AFSK), packet (1200 / 9600 FM).
- Power output: 5 watts SSB / CW / FM with 13.8V external DC; 1.5 W AM carrier; 2.5 W SSB / CW / FM with 9.6V Ni-Cd Pack or 8 "AA" batteries (AM: 0.7 W); up to 5 W SSB / CW / FM power (maximum) programmable via menu on Ni-Cd / AA cells.

10m / 6m / 2m / 70cm FM

FT-8900R

$CALL

HRO Price

The FT-8900 combines "traditional" 2m / 70cm local communications with the exciting capability of Sporadic-E or F2 DX on the 10m and 6m bands, allowing nationwide FM communication.

- Covers 28-29.7 / 50-54 / 108-180 / 320-480 MHz and 700-985 MHz (cellular blocked and non-restorable).
- Independent 2-channel, dual-receive, full duplex.
- High power output with 50 watts on 10m / 6m / 2m and 35 on 70cm.
- Large, easy-to-read LCD display.
- Built-in duplexer.
- More than 800 memory channels. 799 "regular," 6 "home," 5 sets of band edge, and 6 "Hyper Memories."
- Cross-band repeater capability.
- Versatile scanning.
- CTCSS / DCS built-in.
- User-programmable mike keys.
- Remote head mounting with optional YSK-800.

Portable

All Mode FT-897D

$CALL – HRO Discount Price

HF + 6m + 2m +70cm

Now with TXCO Built-in

The innovative FT-897 rugged multiband portable transceiver covers the 160-10 meter bands (now includes 60m) plus 6m, 2m and 70 cm. All mode operation includes SSB, CW, AM, FM and digital modes. With the internal batteries (optional) it will produce 20 watts out. With an external 13.8 volt DC supply it will produce 100 watts out.

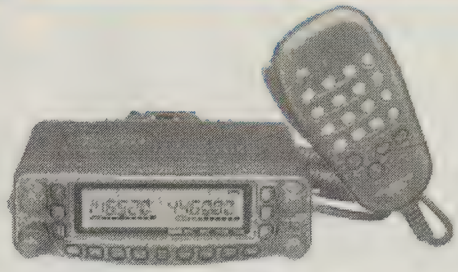
- 200 memory channels with alphanumeric tags.
- ATAS-120/100 compatible.
- Digital signal processing built-in.
- Bolt-on FC-30 automatic antenna tuner optional.
- IF shift control.
- IF noise blanker.
- AGC selector (auto / fast / slow / off).
- VOX operation
- CTCSS / DCS encoders / decoders built-in.
- Collins® 2.3 kHz SSB mechanical filter and 500 Hz CW filter (optional).
- Built-in 3 message memory keyer with adjustable pitch control.
- Automatic repeater shift.
- Smart Search™.
- Spectrum scope.
- Automatic beacon mode.

Accessories:

- FNB-78 internal 4.5 Ah ni-MH battery **$119.95**
- FC-30 antenna tuner **$249.95**
- FP-30 internal power supply **$219.95**
- CD-24 4-hour charge adapter for FNB-78 **$119.95**
- PA26B charger for CD-24 **$85.95**
- ATAS-120 active tuning antenna **$349.95**
- MMB-80 mounting bracket **$35.95**

Visit HRO Stores Nationwide

2m / 440 MHz Dual Band



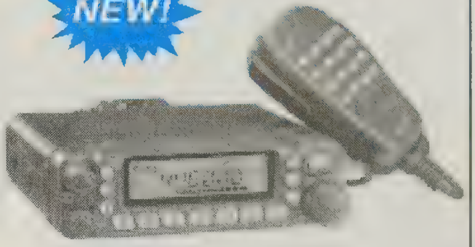
FT-8800R

$CALL – HRO Price

The FT-8800R provides easy operation, outstanding receiver performance and crossband repeat capability.

- Wide receiver frequency coverage covering public safety, commercial, aircraft and goverment communications.
- Independent two channel operation operates as two radios in one.
- Large LCD display.
- High power output with 50 Watts on 2m and 35 on UHF.
- Over 1000 memory channels with 512 regular memories on each band.
- One-touch Band-Pattern.
- CTCSS and DCS tone systems.
- User-programmable microphone keys.
- Convenient remote-head mounting capability with the optional YSK-8900 separation kit.

NEW!



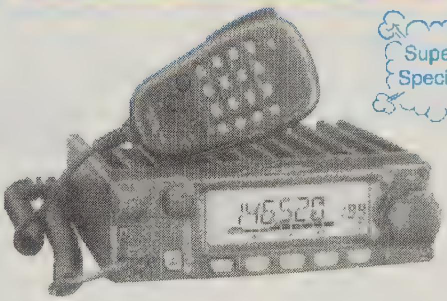
FT-7800R

$CALL – HRO Price

The FT-7800R is designed for simplicity of operation along with high performance in the receiver section. It is the ideal rig for the active Ham who has a need for simplex, repeater, or FM satellite operation on both bands, but without the complication of cross-band repeat capability.

- NOAA Weather Alert (U.S. Version only).
- More than 1000 memory channels, each capable of storing a 6-character alpha-numeric label.
- Wiires™ internet linking capability.
- YSK-7800 remote mounting kit (option).
- One-touch "Hyper Memory" operation.
- High power output - 50 Watts of power output on 144 MHz and 40 Watts on 430 MHz.

2m Mobiles



Super Special

FT-2800M – 2 meters

$CALL

The FT-2800M, the most ruggedly built 2m amateur transceiver ever, provides 65 watts of power along with Yaesu's bullet-proof receiver front end. Direct keypad frequency entry, alphanumeric memory system, high power output and unsurpassed ergonomics make the transceiver an operator's dream come true.

- 65 watts output with 4 selectable power output levels (65/25/10/5 watts). Power levels may be stored in memory.
- Extensive memory system provides a total of 221 memory channels including 200 regular memorys, 10 pairs of band-limit memories and an instant recall "Home" channel. Memories may store repeater shift, CTCSS/DCS data, power level, scanning status and alphanumeric labels.
- CTCSS and DCS encode/decode built in.
- Versatile scanning capability include a choice of scanning/resume options. Scans memories, VFO or within a limited VFO sub-band.
- Wide/narrow deviation selection.
- Weather channels with "severe weather" alert.
- Smart Search ™ may be used to automatically load a special bank of 31 memories based on activity.
- Wires™-II internet linking access feature. (Optional Wires™-II Kit required.)
- Multi-function LCD display shows memory channels, alphanumeric label.
- HM-48A6J DTMF direct access microphone allows direct keypad frequency entry and other controls.
- RF-level squelch.
- Interactive programming menu.
- Supply voltage display.
- Also: time out timer, auto power off, auto repeater shift, 4-level display dimmer and dual watch.

YAESU ACCESSORIES

HF Amp & Power Supply

Quadra System

HRO Discount Price $3999.95

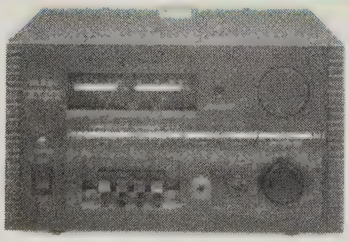
Here's all the linear amplifier you should need for operation on both HF (160 - 15 meters) and 6 meters. It is designed for automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990 and the FT-900 HF radios.

The amp features 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC.

The separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is 500 watts on HF.

The amplifier comes with a built-in high speed antenna tuner. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

Power Supplies



FP-1030A

Yaesu makes two low profile switching powers supplies. The FP-1023A has 23 amps continuous and 25 intermittent. The FP-1030A is 25 amps with meters. Both operate on 110 or 220 VAC.

HRO Prices:	**FP-1023A**	**$149.95**
	FP-1030A	**$239.95**

Antenna Tuner

FC-20 – $279.95
HRO Price

Controlled from the FT-847, the FC-20 will match your HF or 6m antenna. SWR 3:1 on HF and 2:1 on 6m. 100 memories of tuning data.

DC Noise Filter

LF-1 – $26.95
HRO Price

Especially designed for mobile use, consists of a heavy choke coil to surpress alternator DC line noise.

Programming Kits

To Program Handhelds:

ADMS-1E
FT-10/ 40/ 11/ 41/ 50/ 51
VX-1R / VX-5R
HRO Price $38.95

ADMS-1F
VX-110 / VX-150
HRO Price $38.95

To Program Mobiles:

ADMS-2D
FT-3000 / 8000 / 8100 / 8500

ADMS-2E
FT-90R / 2600M
HRO Price $39.95

ADMS-2F
FT-1500M
HRO Price $38.95

To Program a Receiver:

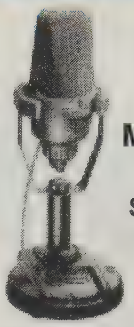
ADMS-3
VR-500
HRO Price $38.95

Radio Cases

Cases for Yaesu Handhelds

Cases are available for Yaesu handheld radios. Please contact your closest HRO store or call one of the toll free numbers for information on the case that matches your HT. Several options match the various radios and the battery packs that are used.

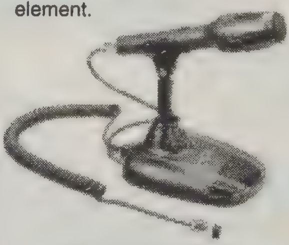
Microphones



MD-200 A8X
$379.00
HRO Price

The MD-200A8X is a stylish, high -quality desk microphone designed for base station use with the latest generation of Yaesu transceivers. (It is fully compatible with the FT-1000MPMKV, FT-1000MP, FT-920, FT-900C/ATC, FT-847, and FT-817. CT-69 adapter required for use with the FT-100/100D.)

Features a studio-quality polyethylene teraphthalate film dynamic element optimized for SSB operation. The variable side pressure control allows the operator to adjust the frequency response of the mike from totally flat to high-articulation. Provision for incorporating user supplied mike element with a switch to select between the standard and user element.



MD-100 A8X
$125.95 – HRO Price

This desk microphone features selectable low-cut filtering and high-emphasis active filtering that allow you to tailor the microphone response for optimum voice clarity or DX punch. It has a large push-to-talk switch and latching button, along with a large rotary up/down, slow/fast control for scanning.

The MD-100a8x is especially designed for the FT-1000MP and the FT-900, but can be used with the following Yaesu HF transceivers: FT-747GX, FT-757GXII, FT-890, FT-840, and FT-1000.

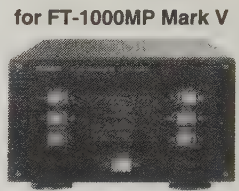
For the FT-1000 MP Mark V

Remote Control FH-1

The **FH-1** remote control will enhance the operating flexibility of your FT-10000MP Mark V. It permits remote control of the contest memory keyer, VFO/memory and main/sub VFO. It connects by a 3.5 mm miniature mono plug to the REMOTE jack on the rear panel of the FT-1000MP. **HRO Discount Price: $88.95**

50 MHz Transverter FTV-1000

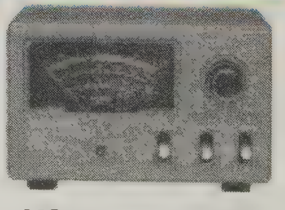
for FT-1000MP Mark V



The FTV-1000 uses high performance MOSFET transistors to provide 200 watts at 50 MHz. The unit runs cool with extensive heat sinking and cross-flow cooling fan.It features exclusive Class-A bias capability. When selected, output power is reduced to 50 watts. Class-A operation provides the best signal on 6 meters.

The receive section follows the same design as the FT-1000MP Mark V. It has a low noise preamp with two gain selections. For local work, these preamps may be bypassed. **HRO Discount Price: $CALL SPECIAL**

Meters



YS-60	**YS-500**
$129.95	**$104.95**
HRO Price	HRO Price

Meters monitor average and peak transmitter power and voltage standing wave ratio (VSWR) of antenna systems in two way radio stations from 1.6 to 60 MHz (YS-60) or 140 to 525 MHz (YS-500). YS-60 requires 12 VDC for PEP operation.

Communications Receiver

Super Special

VR-120D with 12v input

$CALL

For professional-grade monitoring in the field, the VR-120 provides wide band coverage from 0.1 to 1299.996 MHz in AM / FW / Wide-FM modes (cellular and other restricted frequencies blocked). The receiver is constructed with a durable, high-impact polycarbonate case and is water resistant to survive the rigors of outdoor use. The VR-120 low current consumption and can provide up to 20 hours of use on a pair of "AA" batteries.

- Front-end attenuator.
- Special bank of 12 preset mode memories.
- Listen to the shortwave broadcasts from around the world.
- Simple one-touch memories.
- Wide selection of scanning modes.
- Cloning capability to other VR-120's.
- BNC type antenna connector.

Charger Adapters

NC-50 Charger Adapters

The NC-50 quick charger supports most Yaesu hand-held batteries. An appropriate adapter is required. Adapters and batteries supported are shown in the table.

Model	Batteries Supported	HRO Price
CA-7	FNB-12 / 14 /17	$22.95
CA-8	FNB-25 / 26 / 27	$27.95
CA-10	FNB-31 / 33 / 38	$14.95
CA-14	FNB-40 / 41 / 42	$25.95

SWL Receivers

Super Special

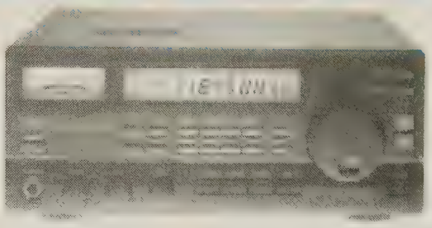
VR-500

$CALL

HRO Discount Price

This high performance miniature communications receiver provides general coverage reception from 100 kHz to 1300 MHz on CW, SSB (LSB and USB), AM and FM (wide and narrow).

- Receives 0.1 to 1300 MHz (cellular blocked).
- Dual watch.
- Band scope.
- 8 character alpha numeric display.
- 1000 memory channels, skip memory 100 channels, 10 channel search band, 10 channel dual receive, one priority channel.



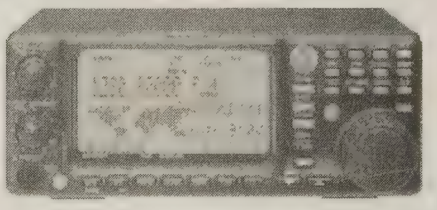
FRG-100B

$CALL

HRO Discount Price

Receive CW, SSB, AM, and FM, 50 kHz to 30 MHz general coverage receiver. Features are push-button selectable from the front panel. A back-lit LCD shows frequency (down to 10 Hz) and operating status.

50 fully-tunable memory channels store frequency, mode and filter selection. Selectable steps of 10 Hz, 100 Hz, 1 kHz standard–other increments are user programmable. Multi-function scanning (memory, band, selectable group, priority) with carrier or time-delay resume. Has adjustable BFO, reverse BFO offset, and selectable CW sideband. Optional 250 or 500 Hz crystal filters. Includes adjustable SSB carrier offset, selectable AGC rate, noise blanker, all-mode squelch and RF attenuation controls. Programmable on/off timer / sleep timer.



VR-5000

$599.95

HRO Discount Price

This multimode desktop scanning receiver has continuous frequency coverage from 100 kHz to 2.6 GHz (cellular frequencies are blocked and non-restorable). Features direct keypad entry and a wide variety of scanning capabilities.

The 2000 memory channels may be separated into as many as 100 memory banks. Memory banks and memory channels may have alphanumeric labels. Sort channels by frequency, alphanumeric name or operating mode. Special pre-loaded bank of most popular shortwave broadcast stations. List may be user edited.

Built-in world clock. Dual receive, band scope graphical activity monitor, field strength meter, audio waveform meter, "Smart Search™" memory loading feature. Optional DSP-1 digital signal processor, DVS-4 digital voice recording unit and FVS-1 voice synthesizer.

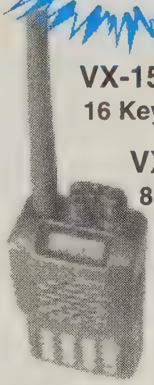
Yaesu Handheld Batteries and Chargers

Battery	Voltage VDC	Rating mAh	Wall Charger	Desk Charger	Radio Series	HRO Price Battery Only
FNB-12S	12	600	NC-18	NC-50	FT-23/33/73/411/470	$71.95
FNB-17	7.2	600	NC-28	NC-50	FT-23/33/73/411/470	$52.95
FNB-27	12	600	NC-18B	NC-50	FT-26/76/415/416/530/815/816	$62.95
FNB-41	9.6	600	NC-60	NC-50	FT-10R/40R	$58.95
FNB-42	9.6	1100	NC-60	NC-50	FT-10R/40R	$62.95
FNB-52LI	3.6		NC-66		VX-1R	$36.95
FNB-64	7.2	700	NC-73B		VX-110/150	$43.95
FNB-80LI	7.4	1300		CD15A	VX-7R	CALL

YAESU HANDHELDS

Single Band

HRO
Discount Prices
VX-110–$CALL
VX-150–$CALL



VX-150
16 Keys

VX-110
8 Keys

The VX-110 / VX-150 ultra compact VHF FM handheld transceivers are packaged under the Vertex label.

- Frequency: TX: 144-148 MHz; RX: 140-174 MHz.
- 5 watts with three selectable power levels Hi/ Med/ Low.
- Direct keypad entry.
- 209 memory channels.
- CTCSS (encode/decode).
- DCS (encode/decode).
- 7 character alphanumeric display.
- Optional ADMS-1F Windows PC Programmable.
- Smart Search™ Auto Memory Loading.
- Automatic number identification.
- ARTS system.
- Tone search scanning.
- Mil-spec 810D/E.
- Backlit keypad.

Dual Band

HRO
Discount Price
FT-60–$CALL

Energency Automatic ID for Search & Rescue

FT-60R

2 m / 70 cm

Extensive Receive Frequency Coverage

Receives 108-520 MHz and 700-999 MHz (cellular blocked) for monitoring Amateur, Public Safety, Business, Marine, Aircraft, Government communications.

- 1000 memory channels w/Alphanumeric labels.
- 10 memory banks.
- 5 Watt output.
- CTCSS and DCS (encode/decode) with split tone; DCS encode only capable.
- One-touch NOAA access.
- 9 DTMF Auto-dial memories.
- WIRES™ Internet Linking
- Huge LCD Display.
- ARTS™
- Rugged die-cast, water resistant construction.
- Two front panel Programmable Keys.
- Automatic Repeater Shift.

VX-2R

2 m / 70 cm

$CALL

HRO Discount Price

Super
Special

It's the world's smallest dual-band HT with up to 1.5 W of output power is your gateway to VHF, UHF, shortwave broadcast, marine and aircraft bands or WIRES™ Internet linking.

- Covers 500 kHz to 999 MHz (cellular blocked).
- Over 1300 memory channels.
- Dual channel "priority" operation.
- VOX (optional VC-25 headset required).
- 3 watts out on 2m (2 on UHF) with optional E-DC-21 DC Adapter cable.
- Multiple scanning functions.
- RF sequelch only.
- Cloning between two VX-2 series.
- Narrow/wide deviation setting.
- ARTS™ auto-range transponder system.
- Automatic repeater shift.
- Channel counter searches.
- Busy channel lock-out.
- DC voltage meter.

Tri-Band

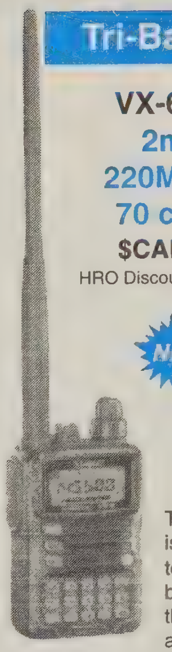
VX-6R

2m
220Mhz
70 cm

$CALL

HRO Discount Price

NEW!



The VX-6R is an easy-to-use, little brother to the VX-7R, and is both submersible (JIS7: 30 minutes of submersion at depth of 3 feet) and rugged.

- Covers 504kHz to 998.99 MHz (cellular blocked).
- 5 Watts of power 144 and 440 MHz bands (1.5 W on 222 MHz).
- FNB-80LI 1400 mAh Lithium-Ion battery pack Standard.
- Emergency Automatic ID(EAI) system.
- Enhanced Paging and Code Squelch (EPCS).
- Wake-Up battery saver system.
- Security password feature.
- 900 memory channels with alpha-numeric labels.
- One-touch memory access system.
- CW trainer.
- Compact package measuring just 2.3" x 3.5" x 1.1" WHD.
- Oversized volume and squelch knobs.

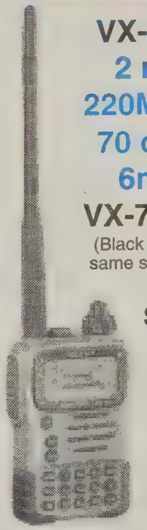
Quad-Band

VX-7R

2 m
220MHz
70 cm
6m

VX-7RB

(Black color same specs)



$CALL

HRO Discount Price

The world's first submersible amateur handheld has true dual receive. Output is 5 watts on 6m / 144 / 440 MHz; 300 mW on 220 MHz.

- Covers 500 kHz to 999 MHz, cellular blocked.
- Over 900 memories.
- Dual receive V-V, U-U V-U.
- CTCSS/DCS encoders/decoders built-in.
- 256 color status indicator strobe LCD.
- Submersible (3 feet for 30 minutes).
- WIRES compatible.
- "Split-tone" capability including DCS encode-only.
- 7.4 volt 1300 mAh lithium ion battery.
- ARTS capable.
- ON/OFF timers.
- "Quick-draw" swivel-mount belt clip.
- 24 hour clock.
- Spectrum scope display.

Yaesu Handhelds

Model	Frequency	Mode	Pwr Supply	Power Out	Current Transmit	Drain Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Price
FT-60R	2m/70 cm	FM	7.2 VDC	5 W	1.5 A	125 mA	.16 µV / 12dB	4.3 (10.9)	2.3 (5.8)	1.2 (3.0)	13.5(370)	CALL
VX-2R	.5- 999 MHz@	FM	3.6 VDC	1.5W††	500 mA	150 mA	.16 µV / 12dB	3.2 (8.1)	1.9 (4.7)	1 (2.5)	4(125)	CALL
VX-6R	.504- 999 MHz@	FM		5 W ***				3.4 (8.7)	2.3 (5.8)	1.1 (2.8)		CALL
VX-7R	50/144/440MHz	FM/AM	7.4 VDC	5 W †	1.6/1.7/1.4 A	150mA	.16 µV / 12dB	3.4 (8.7)	2.3 (5.8)	1.1 (2.8)	8.9(255)	CALL
VX-110	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 µV / 12dB	4.2 (10.8)	2.3 (5.8)	1.1 (2.65)	11.5 (325)	CALL
VX-150	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 µV / 12dB	4.2 (10.8)	2.3 (5.8)	1.1 (2.65)	11.5 (325)	CALL

*Power output can be increased depending on the battery pack selected. #Extended Rx range @Cell phone blocked. **2 and 6m 4.5 W UHF.
†300 mW on 22- MHz. ††1.5 W 2m/1 W UHF. *** 1.5 W on 220 MHz

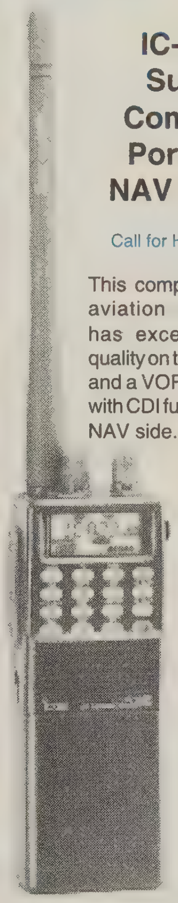
HT ACCESSORIES

Accessory	Model	10R 40R 50 R	60R	11 41	51R	23R 33R 73R	26 76	209RH	103R 203R 703R	411 811 911	415 815	416 418	470	530	VX-1R	VX-2R	VX-5R	VX-7R	VXF-1 VXF-10 VX-150	HRO Discount Price
Headset/Boom Mike	YH-2					*	*	*	*	*	*	*	*	*						$30.95
Mike "Y" Adapter	CT-30	*																		$10 95
Micrphone Adaapter	CT-44		*																	$14.95
VOX Headset	VC-22			*																$62.95
VOX Headset	VC-25		*												*		*		*	$84.00
Speaker/Mike	MH-32			*		*	*	*	*	*	*	*	*	*						$30.95
Speaker/Mike	MH-34B4B	*	*																	$38.50
Speaker/Mike	MH-30C2B			*		*				*							*			$45.95
Speaker/Mike w/Earphone Jack	MH-35A2B			*																$35.95
Speaker/Mike	MH-57A4B																	*		$30.95
Speaker/Mike waterproof	CMP-460A																	*		$49.95
Ear Piece Mike	MH-37A4B		*														*			$40.00
Ear Piece Mike	MH37B2B	*		*	*	*	*	*	*	*	*	*	*	*	*				*	$30.95
Ear Piece Mike	VC-27																	*		$30.95
Ear Phone	FEP-10	*													*					$9.95
Microphone adapter	CT-91																	*		$10.95
Tone Squelch	FTS-17A						*			std	std	std	std	std						$47.95
DC/DC adapter	PA-6					*				*			*							$30.95
DC/DC adapter	EDC-5B	*	*				*				*	*		*			*	*		$26.95
DC/DC adapter	EDC-6	*	*														*	*		$7.95
DC Adpt w/Trickle Charger	EDC-12			*																$38.95
DC/DC adapter	EDC-15														*				*	$38.95
Wall Charger 117 VAC	NC-28B					*	*			std	std	std	std	std						$14.95
Wall Charger 110 VAC	NC-34B						*													$14.95
Wall Charger 117 VAC	NC-60B	*																		$16.95
Wall Charger 117 VAC	NC-66B														*				*	$18.95
Wall Charger 117 VAC	NC-72B																*			$18.95
Wall Charger 117 VAC	NC-88B		*																	$24.00
Wall Charger 220 VAC	NC-18C					*		*	*	*	*	*	*	*						$15.95
Wall Charger 220 VAC	NC-28C					*	*			*	*	*	*							$26.95
Wall Charger 220 VAC	NC-34C					*	*			*	*	*	*	*						$29.95
Rapid Charger	CD-15																*			$29.95
Rapid Charger	CD-15A																	*		$29.95
Quick charger	NC-50	*		*	*	*	*			*	*	*	*	*						$92.95
Desk Top Rapid Charger	VAC-370		*																	$79.95
Desk Top Rapid Charger	VAC-400B																		VX150/110	$69.95
Battery 600 mAh 12V	FNB-12S					*				*			*							$71.95
Battery 600 mAh 7.2 V	FNB-17					std				std			std							$52.95
Battery 600 mAh 12 V	FNB-27						*				*	*		*						$62.95
Battery 600 mAh 9.6 V	FNB-38			*	*															$75.95
Battery 600 mAh 9.6 V	FNB-41	*																		$58.95
Battery 1100 mAh 9.6 V	FNB-42	*																		$62.95
Battery 600 mAh 6.0 V	FNB-49	*																		$19.95
Battery 1100 mAh 7.2 V	FNB-V47	*																		$55.95
Battery 700 mAh 3.6 V	FNB-52LI														*					$36.95
Battery	FNB-58LI																*			$69.95
Battery 1400 mAh	FNB-80LI																	*		$83.95
Battery 1000 mAh	FNB-82LI															*				$38.95
Battery 1300 mAh 7.4 V	FNB-83		*																	$65.95
Battery	FNB-53																		*	$19.95
Battery case AA batteries	FBA-17					*				*			*							$25.95
Battery case AA batteries	FBA-20														*					$22.95
Battery case AA batteries	FBA-23																*	*		$25.95
Battery case AA batteries	FBA-25		*																	$20.95
Cloning Cable	CT-27	*	*																	$14.00
Cloning Cable	CT-35			*																$9.95
Mike Adapter	CT-44														*					$12.95
Ant Adapt BNC - Rev SMA	CN-2	*															*			$8.95
Ant Adapt SMA - BNC	CN-3	*	*												*					$11.00
Belt Clip	Clip 10	*															*			$7.95
Radio case	CSC-V10	*																		$35.95
Radio Case FNB-26/27	CSC-52										*	*								$19.95
Radio case FNB-41/FBA-15	CSC-68	*																		$16.95
Radio case FNB-40	CSC-69	*																		$16.95
Radio Case	CSC-73	*															*			$19.95
Radio Case (soft)	CSC-88																	*		$15.95
Leather Case	LCC-150/TT																		VX150/110	$23.95
Leather Case w Swivel	LCC-150S/TT																		VX150/110	$31.95
BNC-SMA Adapter	CN-3																	*		$8.95
Barometric Sensor Pressure Unit	SU-1																*	*		$39.95

Specials are Listed on the Secure HRO Web Page: http://www.hamradio.com

ICOM

Nav / Coms



IC-A22 Super Compact Portable NAV / COM

Call for HRO Prices

This compact, rugged aviation transceiver has excellent audio quality on the COM side and a VOR transceiver with CDI function on the NAV side.

Options:
CM167 Battery Case
HRO Price $33.95

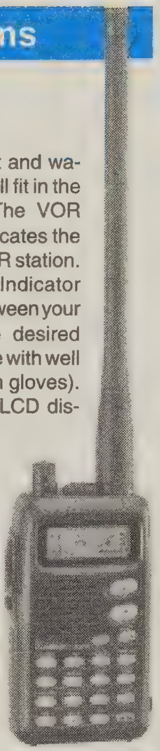
NAV features include:
- Display of radial heading TO and FROM VOR stations.
- CDI shows deviation from course.
- 200 navigation channels.
- ABSS identifies direct radial to a VOR.
- Semi-duplex allows you to contact flight services while receiving VOR signals.

Ergonomic keypad controls all functions. A rotary control allows quick tuning of all frequencies and memories. This radio has an alpha numeric display, built-in sidetone function, 50 memories, one-touch selection of the 121.5 MHz emergency frequency, scanning, VHF marine weather reception; 12-15 VDC power operation with optional power cord; 5 W output.

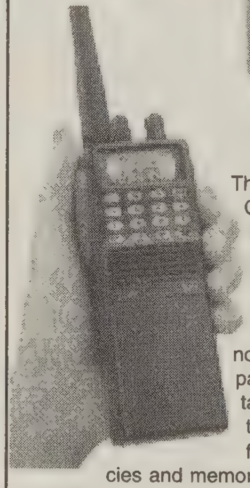
IC-A5

The IC-A5 is similar to the IC-A23 but without VOR Navigation.

IC-A23



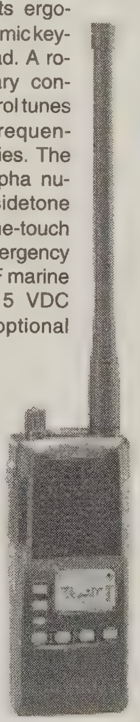
The A-23 is a compact and water-resistant unit that will fit in the palm of the hand. The VOR navigation function indicates the bearing to or from a VOR station. A Course Deviation Indicator shows the deviation between your flying course and the desired course. Easy to operate with well spaced keys (even with gloves). Has a wide and large LCD display. receive conversations can be recorded and played back with built-in voice recorder. Has 200 memory channels, one touch 121.5 MHz access plus many more features.



IC-A3

This compact 760 COM channel air-band transceiver provides easy access to all functions via its ergonomic keypad. A rotary control tunes frequencies and memories. The rugged IC-A3 has an alpha numeric display, built-in sidetone function, 50 memories, one-touch selection of 121.5 MHz emergency frequency, scanning, VHF marine weather reception; 12-15 VDC power operation with optional power cord.

IC-A4



The IC-A4 is a low cost, light weight and compact portable for providing reliable communications for pilots. The channel name function allows you to assign 5-character names to each channel. Transmits and receives on all 760 aviation channels. Has 2 scanning modes.

YAESU

Com

VXA-150 Pro V
$CALL

Vertex Standard VXA-150 Pro V is a communications-only airband transceiver.

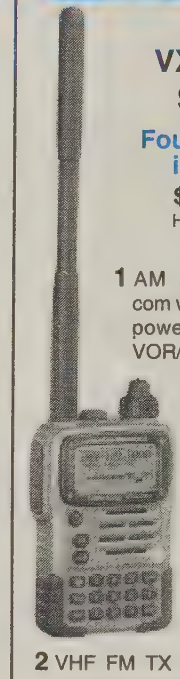
- 5 watts p.e.p. transmit power output.
- Direct frequency entry from 16 button keypad.
- Backlit keypad and display.
- 150 memory channels with 8 character alpha-numeric display.
- Ten NOAA weather channel receive.
- One touch monitor for easy squelch access.
- Comes with rechargeable battery, battery charger, headset adapter, antenna and belt clip.
- Three year manufacturer parts and labor warranty.

Nav / Com

VXA-210
$CALL

The VXA-210 Pilot Nav-Com has the same great features as the VXA-150 PLUS to/from VOR and CDI display and omni bearing selector. Comes with rechargeable battery, battery charger, headset adapter, antenna and belt clip. Three year manufacturer parts and labor warranty.

Nav / Com



VXA-700 Spirit

Four Radios in One

$419.95
HRO Price

1 AM airband nav/com with 5 watts TX power output and VOR/ CDI display.

2 VHF FM TX 144-148 MHZ (amateur radio band) 5 watts (proper amateur radio licensing required to operate on the Ham Band).

3 NOAA weather receive with severe weather alert.

4 FM broadcast receive 88-108 Mhz.

- 1300 MAH lithium ion battery offers twice the battery life of any other airband transceiver available today.
- Large, high-contrast dot matrix display offers the BEST display found on any handheld aviation transceiver!
- Digital battery voltage readout gives a real indication of battery charge status. No more dead battery surprises!
- Charge completed indicator takes the guess work out of battery charging.
- Submersible (JIS Grade 7) 3 feet for 30 minutes.
- Magnesium die-cast case offers superior shielding from RF noise plus unparalleled ruggedness.
- Transmitter time-out timer (user adjustable).

Supplied accessories: Li-Ion battery, charger, headset adapter, antenna and belt clip. Three year manufacturer parts and labor warranty.

SHORTWAVE LISTENING

AOR

Discover AOR, the serious choice in Advanced Technology Receivers

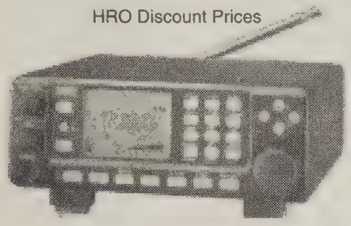
AR-8600BMKII

Blocked —$999.95

AR-8600UMKII

Unblocked — $999.95

HRO Discount Prices



Use this versatile receiver as a mobile, base, or transportable. Power it by an external 12VDC power supply, optional DC lead from a 12V vehicle, or from an optional internally fitted NiCd battery pack. All mode: (narrow FM, wide FM, narrow AM, plus the standard modes) with SSB capability. Steps down to 50Hz, has a TCXO for high stability, and an RS232 port for computer control with free software from the AOR web site. Frequency coverage is 530 kHz to 2040 MHz with no gaps (cellular blocked). Noise limiter and attenuator, band scope with save trace facility, twin frequency readout with bar signal meter, separate controls for volume and squelch, programmable scan and search, custom back-lit LCD display, a total of 1000 memories in 20 memory bands.

Digital Modem

NEW!

ARD9800 Digital SSB

$549.95 – HRO Discount Price

The ARD9800 modem connects to the microphone input of any transceiver. The user simply wires a connector for his particular transceiver, connects the speaker output of his transceiver to the modem and then connects the modem to a 12VDC power source. The normal analog operation of the transceiver remains intact. Digital voice HF is possible by selecting the Digital Mode. Incoming digital voice signals are automatically decoded, no selection is necessary. No modifications are needed to the transceiver.

AR-8200MKIIIB All-Mode

$Call

HRO Discount Price

This handheld wide range receiver has all mode reception including super narrow FM, wide and narrow AM, USB, LSB, CW and standard AM and FM modes. Covers 500 KHz to 3000 MHz (cell band blocked) with 1,000 me-mory channels (20 banks of 50 ch.). True carrier reinsertion in SSB modes. Includes 3 KHz SSB filter! Detachable MW antenna with negative feedback. Computer control and programming (requires optional connection cable). Download free control software from AOR web site! Optional internal cards expand capabilities.

Multi-Media Terminal TDF-370

$299.95

– HRO Discount Price

AOR's multi-media terminal is a powerful addition to your station. Listen to amazingly clear audio, transmit and receive PSK31 and RTTY, apply potent filtering and hear the "weak ones" that others may miss. The unit uses powerful DSP noise reduction and filtering technology including Fast Fourier Transform. SSB and CW signals are monitored in derived "stereo." Decode and display PSK31 or RTTY on display panel – no external PC is required. Enhance transmitted audio with 8 channels of mike equalization. Digitally record up to 102 seconds of audio in up to 8 channels. Receive SSTV 56.7 kHz (PC and software required for viewing.)

Books

World Radio TV Handbook

Complete source-book for 1000+ English broadcasts. Stations listed by country and frequency. Pages of advice, tips, Internet addresses. 2005 edition.

HRO Price: $29.95

The Shortwave Guide

This simple and comprehensive guide to listening to shortwave radio is by the publishers of WRTH. It is perfect for the listener and DXer alike, and its compact form makes it ideal for travelling.

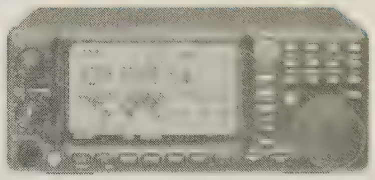
HRO Price: $15.95

Passport to World Band Radio

News and shows from 160 countries. Reviews and advice on how to get started listening to international radio. 2005 edition.

HRO Price: $19.95

YAESU



VR-5000

$CALL – HRO Price

This multimode desktop scanning receiver has continuous frequency coverage from 100 kHz to 2.6 GHz (cellular frequencies are blocked and non-restorable). Features direct keypad entry, a wide variety of scanning capabilities, and 2000 memory channels which may be separated into as many as 100 memory banks. Memory banks and memory channels may have alphanumeric labels. Sort channels by frequency, alphanumeric name or by operating mode.

FRG-100B

$CALL – HRO Price

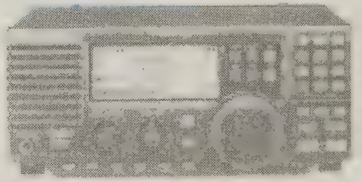
This receiver provides general coverage in CW, SSB, AM and FM modes from 50 kHz to 30 MHz.

- Selectable standard tuning steps plus user-programmable steps.
- LCD display with 10 Hz read-out.
- Broadcast band selection mode.
- 50 tunable memory channels.
- Multi-function scanning.
- Adjustable BFO w/ selectable CW sideband.
- Optional FM unit and CW filters.

ICOM

IC-R75

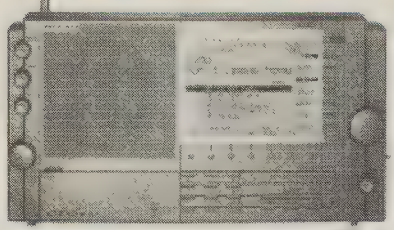
$CALL – HRO Price



Limited quantities available

The IC-R75 covers 0.03-60 MHz – marine, amateur radio and short wave broadcasts. Features a high stability receiver circuit, superior dynamic range, synchronous AM detection, twin PBT, DSP capabilities, provisions for 2 optional filters, FM mode standard, alphanumeric re[illegible] nd selectable RF gain/squelch

AM/FM Shortwave and XM Satellite Radio



NEW!

Eton E1XM

$499.95 – HRO Price

Satellite Radio subscription not included.

- Frequency coverage: 100-30,000 kHz – shortwave, medium wave, AM broadcast band, and longwave; 87-108 MHz FM broadcast band; XM radio satellite radio.
- Reception modes: AM, FM-stereo, single sideband (selectable USB/LSB) and CW.
- Large digital display.
- Programmable memories: 500 user programmable with alpha labeling plus 1200 user definable country memories.
- Memory scan function.
- Digital phase lock loop (PLL) synthesized tuning with direct digital synthesis (DDS) for drift-free frequency stability and finest tuning resolution.
- Dual conversion superheterodyne circuit.
- High dynamic range allowing for detection of weak signals in the presence of strong signals.
- Selectable bandwidths: 7.0, 4.0, 2.5 kHz for excellent selectivity.
- Single sideband synchronous AM detector: selectable USB/LSB or double sideband.
- IF passband tuning.
- Tuning modes: variable-rate tuning knob, direct keypad frequency entry, up/down pushbuttons, and auto-tuning.
- Direct shortwave band entry allows instant access to the shortwave band of choice.
- Selectable AGC: fast and slow mode.
- Display backlighting.
- Dual programmable clocks with WWV auto-setting.
- Dual-event programmable ON/OFF timers.
- Superior audio quality via a bridged type audio amplifier.
- Separate, continuous bass and treble tone controls.
- Headphone jack and stereo line-level input.
- Stereo line-level output.
- Calibrated LCD signal strength meter.
- Built-in antennas: telescopic antenna for shortwave and FM reception; ferrite bar antenna for medium wave AM broadcast reception.
- External antenna connection.
- Power sources: four internal D cell batteries (not included) or the included AC adaptor.
- Dimensions: 13-1/8 x 7 x 2-1/2 inches.
- Weight: 4.2 pounds.

NEW!

HRO
Discount Price
$49.95

Eton FR-250

AM / FM Shortwave Radio, Flashlight, Cell Phone Charger

- Nine band tuning – receives AM, FM and 7 shortwave bands.
- Built-in power generator recharges the internal Ni-MH battery and cell phone batteries.
- Can be powered four different ways: 1) From the built-in rechargeable Ni-MH battery that takes its charge from the dynamo crank and from an AC adaptor (AC adaptor not included); 2) From 3 AA batteries; 3) From the AC adaptor alone (AC adaptor not included); 4) From the dynamo crank alone, even with no battery pack installed.
- Earphone jack – 3.5 mm stereo earphone socket.
- Cell phone charger output jack 3.5 mm.
- Incorporates a fine-tuning control knob superimposed on the main tuning control knob.
- Built-in white LED light source.
- Pleasant audio from the 2 1/2 inch speaker.
- Built-in antennas: telescopic antenna for FM and SW; internal ferrite bar antenna for AM dimensions
- Dimension: 6.7" W x 6-1/4" H x 2-1/2" D.
- Weight: 1.3 lbs.

NEW!

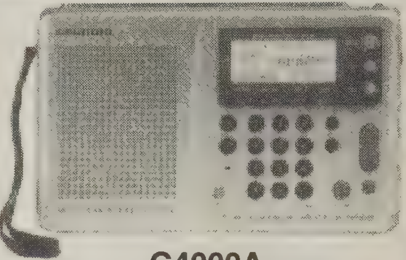
Eton FR-300

$49.95

HRO Price

AM / FM Radio with NOAA, TV VHF, Flashlight, and Cell Phone Charger

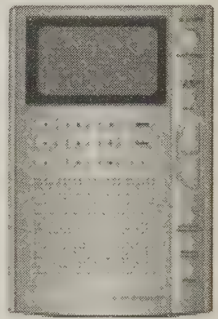
- AM and FM; TV1 and TV2 – VHF channels 2-13.
- NOAA weather – all 7 channels plus "Alert."
- 3 LED light system with emergency flash.
- Siren.
- Crank-charge system charges built-in battery.
- Charges rechargeable battery via AC adaptor/ charger (not included).
- Can be powered by 3 AA batteries or, with all batteries removed, by continuous cranking.
- Dimension: 6.7" W x 6.5" H x 2.5" D.
- Weight: 1.3 lbs.



G4000A

$149.95 – HRO Price

The Yacht 400 just gets better! The G4000A has the same techical specifications and basic appearance as the Yacht Boy 400 but with addition of a leather case. This now brings the receiver into the "Porsche" design family of radios.

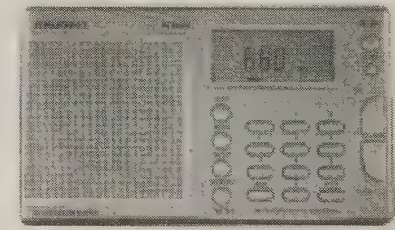


Yacht Boy 550

$99.95

HRO Price

Travel the world from the comfort of your home or tune in the sounds of home when you're on the road. The YB550 is a lightweight, compact unit with direct key in, manual/auto tuning or manual/auto scan of 100 memories. Shortwave tuning from 1715 - 29995 kHz; AM (MW) 520-1710 kHz and FM 87-108 MHz. Features a dual clock, clock and sleep timer, auto power off and AM/FM stereo.



Yacht Boy 300PE

$79.95 – HRO Price

The Yacht Boy 300PE covers broadcast AM and FM (in stereo by earphones), and 13 SW bands from 2.3-26.1 MHz. The expanded shortwave coverage now has 2.3-7.8 MHz in SW1 and 9.1-26.1 in SW2. The improved AM/shortwave tuner eliminates audio muting when the ± tuning buttons are pressed. Features digital tuning and display with 24 memories and direct frequency entry. Includes an alarm clock with wake-up to a radio station and 90-minute sleep timer. Has a dynamic micro-speaker and a jack for earphones. Use the telescoping antenna or attach an external antenna to the jack. Preserve the titanium-look finish with the protective travel pouch included.

GRUNDIG

SWL RECEIVERS

S-350

$99.95
HRO Price

The S-350 offers exceptional value and superior reception of AM, FM and international shortwave. An analog receiver with digital frequency display and clock, it offers the best of both worlds to the radio enthusiast. Utilizing single-conversion superheterodyne circuit design, it's powered by 4 D cell batteries (not included) for exceptionally long play time and comes with an AC adapter. It receives continuous shortwave from 2.3-27.41 MHz, covering all 13 international shortwave broadcast bands of 11, 13, 16, 19, 22, 25, 31, 41, 49, 60, 75, 90 and 120 meters. Get news and events from all over the world and superior reception of your favorite domestic AM and FM stations, including those often hard to pull-in AM talk shows. It's ideal for the AM DXing enthusiast.

- Highly sensitive, selective analog tuner.
- Digital frequency readout.
- Liquid crystal display for frequency and clock.
- Digital clock with wake-up & sleep timers.
- Rotary volume control and variable RF Gain control.
- Variable, independent bass/ treble control.
- Low-pass filter for shortwave and AM reception.
- Main tuning knob and independent fine-tuning control knob.
- Left/right line level outputs (stereo in FM).
- Earphone socket.
- Built-in telescopic antenna for FM and shortwave.
- Built-in ferrite bar antenna for AM.
- DC socket for AC adapter (included) or optional DC car or boat adapter.

Be Ready for the Next Power Blackout

HRO
Discount Price
$39.95

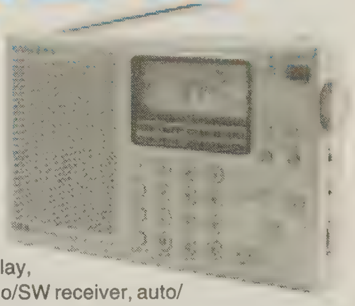
Emergency Radio FR-200

The FR-200 Emergency Radio is powered by a built-in rechargeable Ni-MH battery pack (included), charged by turning the dynamo crank built onto the radio. It can also be powered by 3 AA batteries (not included) or an AC adapter (not included). It receives AM, FM, and continuous shortwave from 3.2-22 MHz, which covers shortwave bands 13, 16, 29, 22, 25, 31, 41, 49, 60, 75 and 90 meters. You'll get great reception of your favorite local AM talk shows and FM music stations and can also listen to international shortwave stations from all over the world. The radio even has a built-in emergency light right on the front. Sound from the built-in speaker is great and the included nylon carrying case (with shoulder strap) protects it from the elements. Plug your favorite earphones (not included) into the earphone jack for private listening.

SANGEAN

ATS-505P

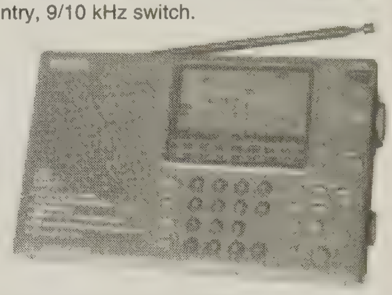
$119.95
HRO Discount Price



The world's first affordable professional digital multi-band receiver offers the performance and features of more expensive table model receivers. It has continuous coverage, auto-memory scan, SSB reception, auto present system, human wake system, illuminated display, dual time, 12/24 hour display, AM/FM stereo/SW receiver, auto/manual search, tone control, keypad entry, 9/10 kHz switch.

ATS-909

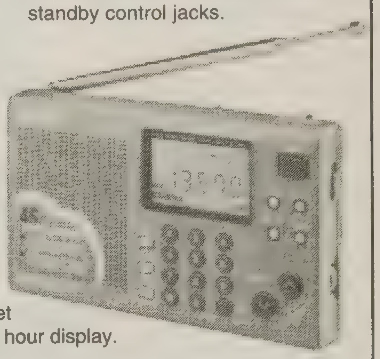
$239.95 – HRO Discount Price



- 306 memories: 261 SW, 18 MW, 18 FM, 9 LW.
- 5 tuning methods.
- ATS auto tuning system.
- SSB (LSB and USB) with 40 Hz tuning steps.
- Wide / narrow filter.
- Manual editing to insert 8 alpha-numeric characters on the display.
- Auto SW search.
- Direct recall of a favorite station.
- 3 individual timers.
- Mono / stereo selector switch.
- PLL dual conversion receiver with tone control.
- Separate audio recorder output & standby control jacks.

ATS-404

$79.95
HRO Discount Price

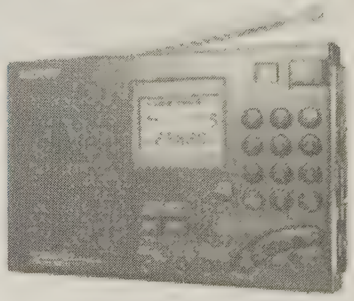


This digital, AM/FM stereo shortwave receiver provides continuous coverage of all shortwave bands and any frequency in between; has an auto preset system; auto memory scan; human wake system; illuminated display with seconds display; keypad entry; 45 preset memories; auto/manual search and 12/24 hour display.

SONY

ICF-SW7600GR

$159.95 – HRO Price

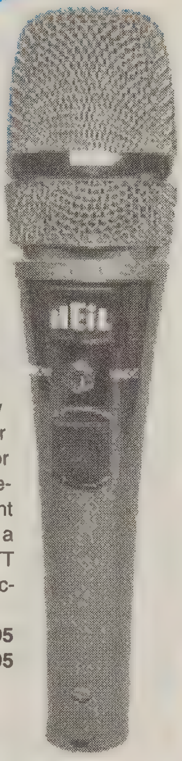


Travelers love this versatile World Band Radio® receiver with stereo FM reception and instant access to all channels and bands. The built-in clock timer has sleep and stand by functions.

- AM (LW, MW, SW) / FM stereo reception.
- Dual-conversion superheterodyne circuitry.
- 10-key direct access™ tuning.
- PLL quartz synthesis tuning gives accurate, drift-free frequency selection.
- SSB circuitry for reception of voice and Morse code (CW) on amateur bands.
- Manual and automatic scan tuning.
- The display is liquid crystal (LCD).
- Antennas: a built-in ferrite bar for MW and LW and a telescoping whip.
- A jack provides easy antenna connection.
- A 3" speaker and high / low tone provides a wide range of sound for music or news.
- Requires 4 AA batteries (not included) or the optional worldwide AC adapter.

HEIL SOUND

GM Series



The GM series dual-element studio microphone is specifically designed for full range, smooth, articulate SSB audio with a wide audio response. It is also great for AM and FM transmissions. It has a wide 60 Hz to 16 kHz frequency range coupled with a 6 dB midrange peak @ 2 kHz. The microphone comes with the new full-range element plus your choice of either the HC-4 or HC-5 key element. Switch between the full-range element and the HC element with a selector switch next to the PTT button. High gloss black lacquer finish.

GM-4	**with HC-4**	**$129.95**
GM-5	**with HC-5**	**$129.95**

HM-10 Series

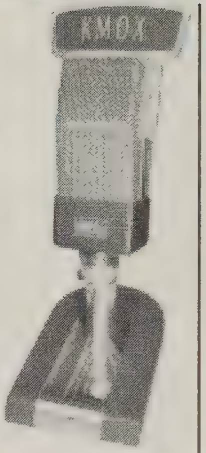
Without a doubt the HM-10 is the highest quality and most cost effective microphone – EVER! Order it with your choice of the HC-4 "DX Dream Machine" or the HC-5 Full Range communications elements. The HM-10 Dual contains both the HC-4 and HC-5 elements, switch selectable giving you a choice for the varying conditions. Both require the CC-1 cable.

Use as a handheld or desk mounted microphone. Has Heil's light touch recessed PTT switch or can be used in VOX mode. High gloss black lacquer finish.

Model	Description	HRO Price
HM-10 (4)	Microphone with case and HC-4 element	$65.95
HM-10 (5)	Microphone with case and HC-5 element	$65.95
HM-10 Dual	Microphone with HC-4 & HC-5 elements	$129.95

The Classic

Today's Studio Sound in the Classic Look of the 1930's



An exact replica of the RCA74B broadcast microphone. Truly a piece of art! High quality, all metal construction – no plastic. Three models all feature the new Proline broadcast dynamic element plus your choice of a second communications element, switchable from the back panel, along with the soft touch PTT switch. All Classic microphones are dual impedance. A small slide switch on the bottom selects 600 ohms or 30k ohms. The stainless steel trimmed cast steel base is removable and the logo is rotatable with inverted mounting on the PL-2 Heil boom. Needs a mating CC-1 cable. Heil Sound mails your call letters after purchase.

HRO Prices: Classic 5 (HC-5) $219.00
Classic 4 (HC4) $219.00
Classic- IC (pre-Pro Icom) $219.00

For Icom Radios

"iC" Series Electrets

Heil Solves the Icom Problem!

With exception of the Pro models, microphone preamps in all Icom rigs are down in gain by -10 dB making it difficult to use high quality Heil dynamic microphones. Bob Heil has personally solved this problem with his new "ic" series of microphones and boomsets. His newly developed, high performance electret with higher output, that works ONLY on Icom radios, is now used in the iCM, Pro-Set ic, HMM-ic, BM-10ic and Traveler.

iCM

Salvation for Icom Users!

The Heil 'iCM' is the final answer for your pre -"Pro" Icom rig. Just plug it in and enjoy Bob Heil's high quality iC electret microphone. Supplied with a universal clip to interface with any Heil stand or boom.

- Beautiful new platinum finish.
- Attached 5' length of Heilwire cable – nothing else to buy.
- Soft touch PTT switch.
- Wide frequency range: 35 Hz to 10,000 Hz @ -3 dB

HRO Price $89.95

Handheld

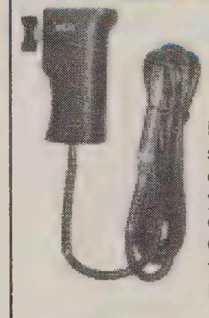
Handi-Mics

No more hollow sounds due to old clamshell microphone designs! Heil Sound brings new technology to five clear-sounding Handi-Mics, each for a different application and rig. A very comfortable tactile PTT switch is incorporated on four of the models. Only 4 inches tall, each requires the accessory shielded coil cable – 2' coiled and 2' straight. Includes a unique dash or wall hanger, boom clip, and windscreen. **HRO Price $80.00 each**

Dash hanger

Model	Element	PTT
HM-4	HC4DX Dream Machine	Yes
HM-5	HC5 full range	Yes
HM-iC	Electret for most Icom	Yes
HM-PRO	Wide range broadcast	Yes
HM-PRO+	Used on live sound stage & as an interview microphone	No

Switches



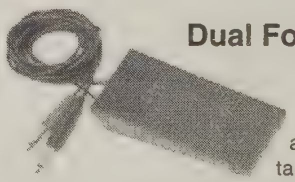
HS-2

PTT Hand Switch

Heil's high quality hand switch made for P.T.T. operation is shaped to fit your hand naturally and comfortably. Comes with a 6 foot cable that plugs into the AD-1 or CC-1 adapter. **HRO Price $24.95**

FS-2

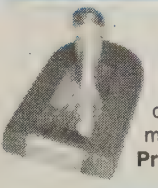
Dual Footswitch



Control the transceiver and the linear amplifier simultaneously. Two 10 amp microswitches are mounted so the one feeding the amplifier turns on first (RED lead) and the BLACK lead turns on the transceiver last. This unique Heil footswitch eliminates any active interface problems between transceivers and RF amplifiers. Ergonomically designed for maximum comfort and reliability with the hinge under your heel. The hinge is a solid bar running completely through instead of screws that may work out. **HRO Price $38.95**

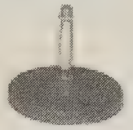
MICROPHONES

Mounts



CB-1 Classic Base

Beautiful reproduction of a 1930 RCA microphone base. Heavy three pound cast steel with stainless trim. 3" chrome mount accepts 5/8" X 27 hardware. **HRO Price $65.95**

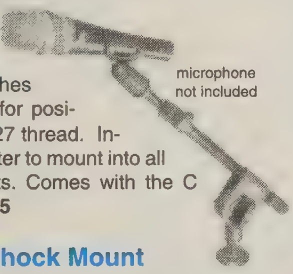


TB-1 Table Base Mount

Heavy round steel desk stand accepts 5/8" X 27 hardware. Stands 6" high. **HRO Price $24.95**

DT-1 Desktop Flush Mount

Allows PL-2Tand SB-2 to slip into 1-1/2" hole drilled into desktop. **HRO Price $31.00**



microphone not included

SB-2
Small Boom

Extends from 10 to 24 inches with angle adjustments for positioning. Standard 5/8 X 27 thread. Includes Teflon stem adapter to mount into all of the Heil PL2T mounts. Comes with the C clamp. **HRO Price $42.95**

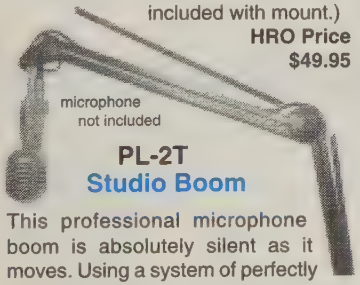
microphone not included

SM-1 Shock Mount

The ultimate mount system for Proline, HM-10 or iCM can be used on all booms or stands. 8 point flexible suspension supports and isolates the Heil microphone from mechanical vibrations. 5/8" X 27 standard threads will mount onto microphone stand and boom arms. (Shown with the GM-5 microphone. Not included with mount.) **HRO Price $49.95**

FL-2
Flange Mount

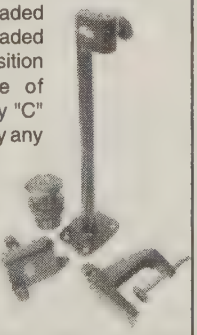
Now improved with brass insert. Fits the PL-2T. **HRO Price $15.00**



microphone not included

PL-2T
Studio Boom

This professional microphone boom is absolutely silent as it moves. Using a system of perfectly balanced internal springs to hold a microphone weighing up to 1.5 pounds, it stays exactly where it is placed. The balanced arm extends to 45." No longer do you have to remove the XLR connector to feed your microphone wire inside the wire channels. Top and back boom plates remove for easy threading of cable. The PL-2T accepts all of the industry standard 5/8" - 27 threaded clips or shock mounts. The chrome threaded stem can be locked into its needed position depending upon the exact type of microphone or shock mount. A handy "C" clamp type mount clamps onto virtually any surface. **HRO Price $69.95**



RS-1 12" Riser allows you to mount the PL2T behind the transceiver or console and lift the base up 12" from the table. Works with SB-2 or PL-2T. **HRO Price $25.95**

HEIL PROLINE
Affordable Performance

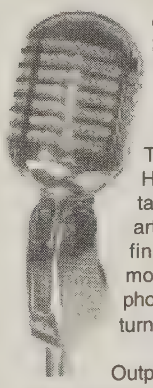
Heil Sound's Pro division is dedicated to the design of high quality audio products exclusively for commercial broadcast, recording studio, and concert tour uses that require a smooth response over a very wide frequency range.

Proline Specifications
- Generating element: dynamic.
- Body: mat steel, die cast zinc.
- Response: 40 Hz to 18 kHz.
- Impedance: 600 ohms.
- Output level: -55 dB @ 1,000 Hz.
- Polar pattern: Cardioid, uniform front to back discrimination.
- Diaphram: large diameter, low mass aluminum.

Classic PRO

shown with optional boom PL-2T

The Classic PRO is an exact reproduction of the 1930 RCA 74B broadcast microphone - complete with your call letters. Using the high quality Heil PROLINE dynamic element, the Classic PRO is used in many top commercial FM radio stations. 600 ohms, balanced output, 8' cable terminated into a 3 pin XLR. Comes mounted on the CB-1 base which can be removed and mounted on our PL2T as shown. **HRO Price $189.00**



Heritage™

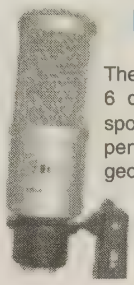
The newest member of the Heil ProLine, the Heritage™, is simply a piece of art with its beautiful chrome finish. 5/8" X 27 thread mount accepts all microphone hardware. Slide switch turns the audio on or off.

Outperforming many $1,000 studio microphones, the Heritage™ uses the Heil Proline commercial broadcast element. The 600 ohm balanced output is fed to the three pin XLR at the bottom of the microphone. **HRO Price $130.00**

NEW!

Heil PR30

PR-30, a professional quality dynamic cardioid microphone designed for commercial broadcast, recording and live sound reinforcement applications which require a smooth flat response over a wide frequency response. The PR-30 has a comparable sound to the finest condenser microphone because of it's wide frequency response, excellent transient response and low IMD. Shipped with the SM 3 5/8" -27 mount assembly. **HRO Price $199.95**

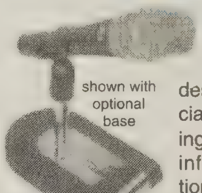


Heil PR40

NEW!

The PR 40 features the Heil DM 6 dynamic element with response down to 28 Hz and stays perfectly flat up through 18kHz. geous vocal articulation. PR 40 looks like, feels like and acts like a condenser in every respect.
HRO Price $209.95

Heil PR20



shown with optional base

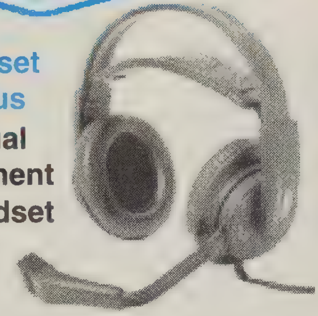
This professional quality dynamic cardioid microphone is designed for commercial broadcast, recording, and live sound reinforcement applications which require a smooth, flat response over a wide frequency range. It uses the Heil Proline microphone element for excellent transient response, low I.M.D. and reduced proximity effect. Truly a remarkable microphone. (Shown with optional CB-1 base)

As with the Classic PRO, the PR20 has true 600 ohm balanced output. Using the new CC-1 XLR cables listed below, this great microphone can be used with most of today's popular transceivers. **HRO Price $130.00**

Pro Connector Cables

This cable is used to connect the Classic Pro, Proline and Heritage microphones to your 8-pin Kenwood, Yaesu, or Icom transceiver. Made with Heilwire to help reduce RFI and noise. Pig tail easily connects to HS-1 or FS-2.

CC-1 XLR Y	(Yaesu cable)	$30.95
CC-1 XLR I	(Icom cable)	$30.95
CC-1XLR K	(Kenwood cable)	$30.95



Proset Plus Dual Element Headset

Here is an excellent choice for DX and contest operations – a stereo headset for dual diversity or dual receiver operation. Delivered to you with foam microphone wind-screen and washable cotton earpad covers.

- Extremely light, comfortable.
- Switchable HC-5 or HC-4 elements.
- Heavy duty cable system.
- Use boom on left or right.
- Phase reversal switch.
- Self adjusting cushioned headband.
- Highly efficient tuned speaker cavities.
- Rugged 1/4" speaker swivel. studs.

HRO Price $179.95

BAG -1 Leatherette travel bag for Pro Set and Pro-Plus **HRO Price $25**
BAG -2 Leatherette travel bag for Quiet Phone, Traveler, & BM Series.
HRO Price $20

BM-10 Headset / Microphone

Heil has taken a fresh look at the headset that started it all back in 1985. They have retooled the BM-10 and have upgraded the cable system to use the AD-1adapter interface. (When ordering, specify what brand of transceiver you have.)

BM-10-5 Full range articulation (needs AD-1). **HRO Price $89.95**
BM-10-i For Icom only. **HRO Price $96.95**

BM-5

The BM-5 is the single-sided version.
BM-5-5 Full range articulation (needs AD-1). **HRO Price $69.95**
BM-5"ic" For Icom only (comes with AD-1ic). **HRO Price $86.95**

Noise Canceling Headsets

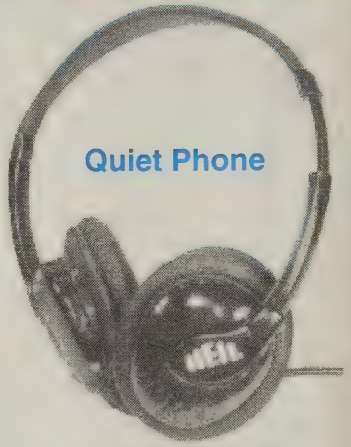
Proset Quiet Phone

The Quiet Phone is a result of many years of research and development. Normal headsets are designed to reproduce audio and pay little attention to the outside environment. In many cases, the surrounding background noise is louder than the audio that you are trying to hear in the headset.

Heil Sound applies a unique active noise canceling technology that uses two small out-of-phase microphones and a differential amplifier placed deep inside the headphones. These microphones pick up outside ambient noise as well as the audio information. Using the phase information and processing it in the differential amplifier reduces sounds under 400 Hz up to 70%. The result is a dramatic reduction of ambient noise as well as noise from blowers, jet engines, the TV in the next room and other operators in the shack.

The Proset Quiet Phone is the answer to the requests from major DX Pedition operations and leading contest stations. It is the only headset with both "Quiet Phone" technology and speaker phase reversal.

HRO Price $199.95



Quiet Phone

Active Noise Canceling Headset

- Soft leatherette cushions with adjustable head-band to insure comfort-able listening for extended periods of time.
- Operates on a single "AA" cell for 30 hours providing clean high fidelity dual channel audio.
- Right angle 1/8" plug for use with most CD or MP3 players. The right angle allows it to be plugged into the arm of an airplane. A 1/4" stereo adapter allows use with your amateur radio receiver.
- Folds flat for easy carrying.

HRO Price $99

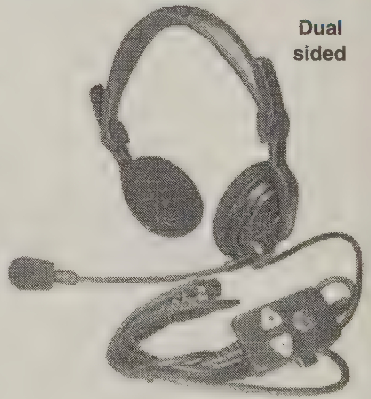
Traveler

Traveler – A lightweight headset for ALL occasions

Single sided

The Traveler headset with the high performance Heil "ic" electret element has an in-line switch – PTT UP and DOWN. Various 3' long patch cables allow the headset to be used on different radios. One headset for virtually all radios – just connect the optional interface cable.

HRO Prices:
Single sided $89.95
Dual sided $109.95



Dual sided

Interface Adapters:

Yaesu YM	HSTAYM	$19.95
Icom 706	HSTA706	$19.95
Icom 8 pin	HSTAI8	$19.95
Kenwood 8 pin	HSTAK8	$19.95
Kenwood Modular	HSTAKM	$19.95

Cables for handi talkies*:

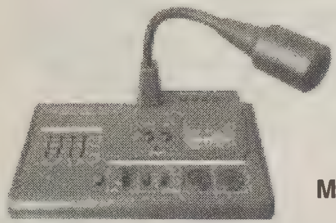
Yaesu VX except VX7	HSTA-VX	$19.95
Kenwood handhelds	HSTA-KHT	$19.95
Icom handhelds	HSTA-iHT	$19.95

*PTT works with handhelds, but UP and DOWN do not.

MICROPHONES & HEADSETS

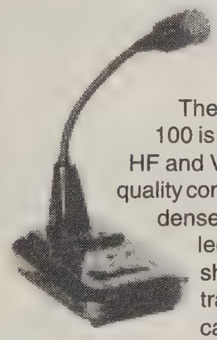
PRYME®
Radio Products

Premier Communications has a Pryme product to meet any portable communication need. They offer small speaker microphones (the SPM-100 series) and full sized microphones (the SPM-900s). Users on the go will appreciate ultra comfortable lapel microphones (SPM-200 and 200E) and the patented over-the-ear boom microphones (SPM-400). For high-noise environments, use a noise resistent throat mic (SPM-500). Users that need "low profile" communications should check out the flesh-colored "palm mic" (SPM-700) which can easily be concealed.



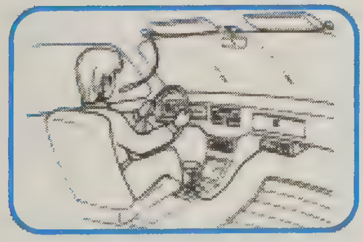
PMC-200 Desk Microphone

This advanced mirophone uses a highly sensitive ceramic condenser element and an amp with three compression levels. A graphic equalizer helps you customize your audio. Adjustments are easy with the bult-in analog meter. It has an on-air indicator, frequency up/down controls, and locking and momentary PTT.



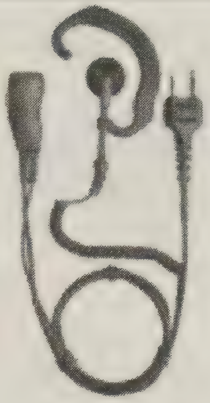
PMC-100 Desk Microphone

The high performance PMC-100 is compatible with all modern HF and VHF transceivers. Has high quality compressor amp, ceramic condenser microphone element, selectable FM or SSB audio shaping selector switch, dual transceiver inputs. Optional cables for specific radios.

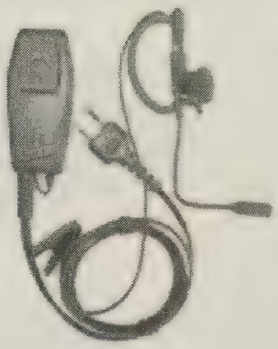


MMC-100 "Sun Visor" Microphone

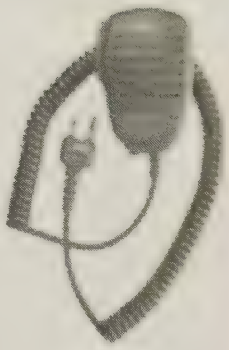
This permanently installed mobile microphone makes mobile operations safer. Optional cables for specific radios.



SPM-200EB

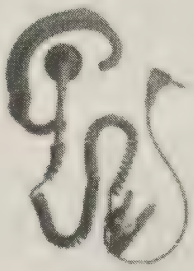


SPM-400A

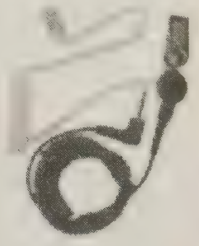


SPM-100

SPM-800



EH-100



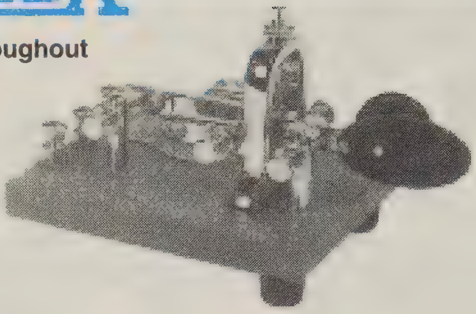
EH-1000

Model	Description	HRO Price
SPM-100	Speaker / microphone for ADI, Icom, Standard, Yaesu	$22.95
SPM-101	Speaker / microphone for Kenwood	$29.95
SPM-102	Speaker microphone for FT-50R / VX-1	$27.95
SPM-103	Speaker microphone for Mototola Radius Line	$33.95
SPM-300EB	Lapel mic with ear hook for ADI, Icom, Yaesu, Alinco	$29.95
SPM-301EB	Lapel microphone and ear hook for Kenwood	$29.95
SPM-302EB	Lapel microphone with ear hook for FT-50R / VX-1	$29.95
SPM-303EB	Lapel microphone with ear hook for Motorola Radius Line	$29.95
SPM-400A	Earpiece/mini boom mic for ADI, Icom, Standard, Yaesu	$34.95
SPM-401A	Earpiece with mini boom microphone for Kenwood	$30.95
SPM-402A	Earpiece with mini boom mic w/ PPT cord FT-50R / VX-1	$29.95
SPM-403A	Earpiece with mini boom mic w/ PPT cord Motorola Radius	$29.95
SPM-800B	In-helmet speaker mini boom for ADI, Icom, Stanadard, Yaesu	$68.00
SPM-801B	In-helmet speaker mini boom for Kenwood	$59.95
SPM-802B	In-helmet speaker mini boom for FT-50R/VX-1	$59.95
SPM-803B	In-helmet speaker / mini boom for Motorola Radius Line	$68.00
SPM-800F	In-helmet speaker / mic for ADI, Icom, Stanadard, Yaesu	$68.95
SPM-801F	In-helmet speaker / mic for Kenwood	$68.95
SPM-802F	In-helmet speaker / mic for FT-50R/VX-1	$59.95
SPM-803F	In-helmet speaker / mic for Motorola Radius Line	$68.95
EH-169S	Earphone for speaker/mic 10" cord, 2.5mm	$20.95
EH-189S	Earphone for speaker/mic 10" cord, 3.5mm	$20.95
EH-169X	Earphone for Handheld radios, 22" cord, 2.5mm	$20.95
EH-189X	Earphone for Handheld radios, 22" cord, 3.5mm	$20.95
EH-1069S	Earphone for speaker/mic 15" cord, 3.5mm	$32.95
EH-1089S	Earphone for speaker/mic 15" cord, 2.5mm	$32.95
EH-1069X	Earphone for Handheld radios, 30" cord, 2.5mm	$32.95
EH-1089X	Earphone for Most Handheld radios, 30" cord, 3.5mm	$32.95

VIBROPLEX®

Quality and Pride Throughout

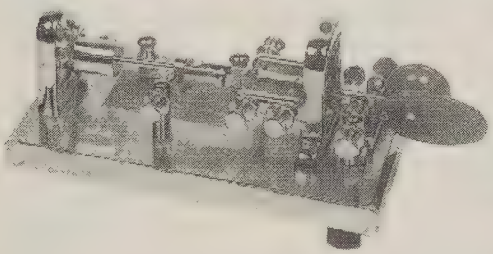
"Vibrokeyer"



The Vibrokeyer is designed for those who prefer a non-iambic paddle. The single lever paddle imitates the automatic dots and dashes of the electronic keyer with the same motion used to operate the "Bug".

Vibrokeyer Gold: The entire base is 24K gold plated with bright decorative chrome top parts. Smooth, jeweled movements for precision control. Stainless steel hardware where appropriate. **HRO Price $299.95**
Vibrokeyer Deluxe: Highly polished decorative chrome base with bright chrome top parts. Silky smooth movements are jeweled as in fine Swiss watches. **HRO Price $179.95**
Vibrokeyer Standard: A neat, crisp black textured finish base with bright decorative chrome parts. Non-jeweled movement. **HRO Price $139.95**

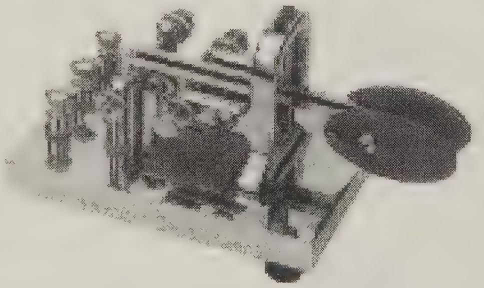
"Original"



The *Original Vibroplex*, is a genuine piece of history. First patented in 1894, the Original is still manufactured today using tools and dies very similar to those used by its inventor, Horace G. Martin. Modern-day operators can put their fist to the same equipment as the Western Union and railroad operators of old.

Original Gold: The entire base is 24K gold plated, with bright decorative chrome top parts. Smooth, jeweled movements for precise control. Stainless steel hardware where appropriate. **HRO Price $299.95**
Original Presentation: 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. **HRO Price $299.95**
Original Deluxe: Same as the Presentation but without the 24K gold plated brass plate. **HRO Price $199.95**
Original Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price $159.95**

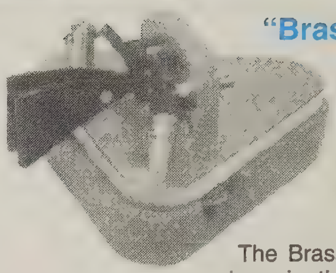
"Iambic"



This is the modern descendent of the Original. It incorporates the traditional Vibroplex look for use with modern electronic keyers.

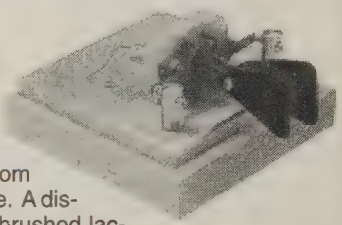
Iambic Gold: The entire base is 24K gold plated with decorative chrome top parts. Smooth, jeweled movements for premium control. Stainless steel hardware where appropriate.
HRO Price $269.95
Iambic Presentation: 24K gold plated brass plate on a highly polished decorative chrome base with bright chrome top parts. Its silky smooth jeweled movements are like those found in fine Swiss watches. **HRO Price $239.95**
Iambic Deluxe: Same as Presentation but without the 24K gold plated brass plate. **HRO Price $259.95**
Iambic Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price $139.95**

"Brass Racer"



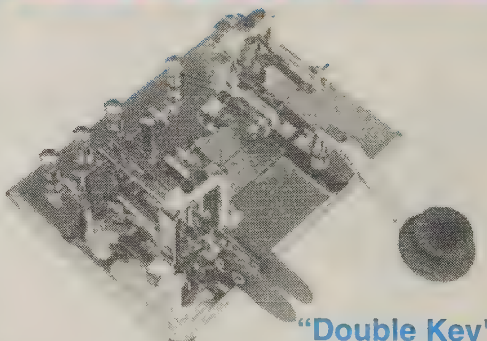
The Brass Racer keys are unique in that there are NO springs in the design. They are crafted from solid brass and mounted on a base of polished hardwood. Tension on the paddle is infinitely adjustable by the use of magnets.

Brass Racer Iambic: This iambic paddle is designed for use with an external keyer or the keyer in your radio. The Triangle Brass base is mounted on polished hardwood. **HRO Price $129.95**



Square Brass Racer: This key is a departure from our traditional style. A distinctive design of brushed lacquered SQUARE brass mounted on polished hardwood. **HRO Price $124.95**

Combination



"Double Key"

By popular request, Vibroplex has combined its Straight Key with the classic Vibrokeyer or Iambic paddle on one massive steel base. The Double Key allows the operator to instantly switch from an electronic keyer to the personal touch of a straight key.

Gold Double Key: The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where required. **HRO Price $429.95**
Double Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price $349.95**
Double Key Standard: A neat, crisp, black-textured finish base with bright chrome top parts. **HRO Price $299.95**

KEYERS & KEYS

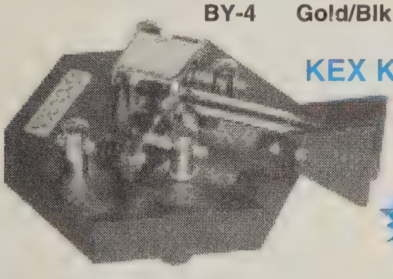
Bencher inc

BY Series Iambic Paddles

You will enjoy the smooth, precise action of a Bencher paddle with any iambic keyer. These paddles feature a heavy steel base, gold plated silver contact points, non-skid feet, stainless steel adjustable spring, self-adjusting needle bearings, and large acrylic finger paddles.

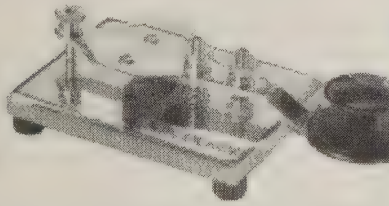
HRO Prices:			
	BY-1	Black	$99.95
	BY-2	Chrome	$119.95
	BY-3	Gold	$319.95
	BY-4	Gold/Blk	$199.95

KEX KEY



NEW!

Gold plated silver contacts. Molded acrylic finger pads. Polished chromium parts. Magnetic tension adjustment and adjustable contact spacing. Black power coated steel base **HRO Price $179.95**



RJ Series Hand Keys

The "RJ" hand keys have an advanced American-style design derived from the telegraph keys that won the west, yet with modern features like Oilite bearings, a solid navy knob, gold-plated solid silver contacts, full locking adjustments of all tension and spacing parameters, and Bencher quality materials throughout. These keys are ideal for the new amateur just mastering code as well as the old time brass pounder anxious to "clear the hook." This key offers the Morse code operator an investment that will bring years of pride and satisfaction.Try the Bencher "RJ" hand key at your nearby HRO. You will be convinced there is no better key available.

HRO Prices:			
	RJ-1	Black	$99.95
	RJ-2	Chrome	$119.95

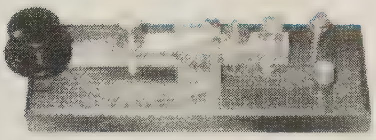
ST Series Single Lever Paddles

Superb Bencher features and construction for the ham who prefers single lever operation.

HRO Prices:			
	ST-1	Black	$109.95
	ST-2	Chrome	$129.95

ALPHA DELTA

Kent Paddles

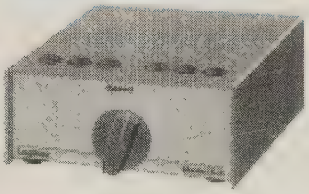


Kent Straight Key

These paddles offer a smooth feel with sealed ball bearings. Precise gap adjustments with knurled heads on fine pitched screws and locking nuts. Made from solid brass within a permanent brass housing.

Twin Paddle	(TP-1)	$149.95
Single Paddle	(SP-1)	$139.95
Straight Key	(SK-1)	$129.95

LOGIKEY



K-3
Iambic Memory Keyer

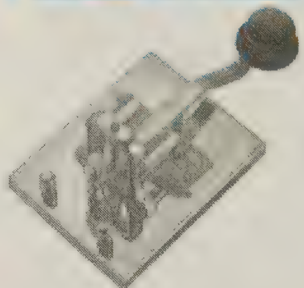
Features six editable messages with 1530 characters total. Messages can include programmed functions. Auto-insertable contest serial number, speed control range 5-60 WPM, adjustable weighting, adjustable frequency monitor, tune function for X-meter adjustment, automatic character spacing, allows for paddle inserted text and more! **HRO Price $119.95**

For more information, see web site at www.qth.com/ldiom

Secure
On-line Ordering
http://www.
hamradio.com

Straight Keys

VIBROPLEX®



Vibroplex® offers a STRAIGHT key with a unique mechanical action, unlike any other straight key that has ever been manufactured.

Straight Key Gold: The entire base is 24K gold plated with bright decorative chrome top parts. Stainless steel hardware where appropriate. **HRO Price $289.95**
Straight Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price $169.95**
Straight Key Standard: A neat, crisp black textured finish base with bright chrome top parts. **HRO Price $129.95**

Kilowatt / Hour Monitor

NEW!

Kill-A-Watt

Connect equipment into the Kill-A-Watt™ to assess how efficient it is. A large LCD display counts consumption by the kilowatt hour just like utility companies. You can figure out your electrical expenses by the hour, day, week month, even an entire year. Monitor the quality of your power by displaying voltage, line frequency, and power factor.

Specifications:
Operating Voltage: 115VAC
Maximum Voltage: 125 VAC
Maximum Current: 15A
Maximum Power: 1875 VA
HRO Price $39.95

PACKET & HF MODEMS

Kantronics

Talon Commercial UDC

The Talon's exceptional design allows for reliable point-to-point, or point-to multipoint, communications under less than perfect conditions and excellent performance under adverse signal paths. This is a commercial product designed for asset and vehicle tracking, gas/oil production monitoring, traffic control, water management, utility monitoring, public safety, test messaging and emergency management. The Talon features include:

- MAP™ technology.
- LMR frequencies.
- Embedded GPS module (option).
- Data throughput of 9600 bps.
- Field configurable as master or remote.
- Real time SCADA and telemetry.
- Transparent operation.
- Peer to peer communications.

HRO Price $1399.95 (w/ GPS)
$1199.95 (w/o GPS)

Keeping Up to Date . . .

The KAM '98.3 and KPC-3 Plus 9.0 are now available, providing a second serial port for GPS and APRS capabilities, plus additional GPS improvements.

The KPC-9612 Plus, now sold at version 8.2, has advanced digipeat-ing for GPS, plus the ability to download EMWIN weather broadcasts.

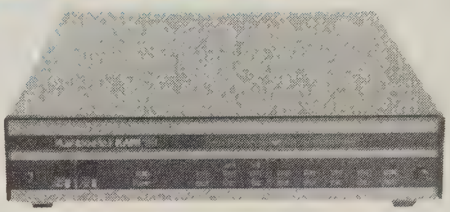
All models work great with Pacterm '98.

KPC-9612 add-on Board

Add a third port to your KPC-9612 Plus! 1200 or 9600 board available. See the Kantronics website for technical details.

HRO Prices: 1200 board $99.95
9600 board $125.95

Visit the Kantronics Web Page:
http://www.kantronics. com

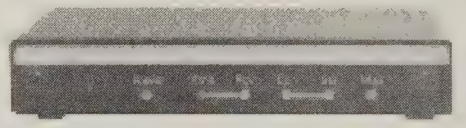


KAM '98 – HF and VHF TNC

This great-grandson of the UTU features numerous outstanding modes and functions including CW, RTTY, AMTOR, Pactor, and G-TOR for HF digital operations. It also provides programmable MARK and SPACE tones, bargraph tuning for HF ops, packet operation at both 300 and 1200 baud and a mailbox similar to the KPC-3 Plus. It's a great fit with the new 160 meter to 2 meter rigs and it supports GPS operations. **HRO Price $399.95**

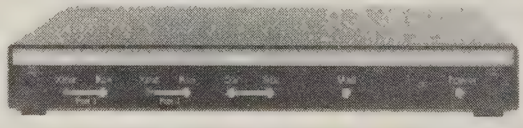
KAM XL™ Multi-Mode DSP Controller

Kantronics' third generation multi-mode TNC is a state of the art design for operations on HF, VHF and UHF while supporting DSP modems and popular new modes of operation. The unit provides modes of Packet 300 or 1200bps, G-TOR, Pactor 1, AMTOR ARQ, PSK31, RTTY, NAVTEX/AMTEX, ASCII, WEFAX and CW. It has a dual port mailbox and remote SYSOP access. It is GPS NMEA-0183 compatible and provides Kantronics Host Mode and KISS. **HRO Price $389.95**



KPC-3 Plus – VHF / UHF TNC

This compact, low current TNC has become the work horse of packet radio today. It features multiple packet connects, digipeating for APRS operations, WEFAX reception, a GPS mode for tracking, personal packet mailbox and more. **HRO Price $179.95**



KPC-9612 Plus/128 Dual-Speed, Dual-Port TNC

TNC is the rapid delivery model, supporting 9600 baud. It features both 1200 and 9600 packet ports, advanced APRS digipeating (APRS is a trademark of Bob Bruninga), optional (K-Net) networking, amateur beeper (paging) and more. **HRO Price $379.95**

Terminal Software

10000011..
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CSS
Creative Services Software

NEW!

For Kantronics or Timewave /AEA

HRO Price $99.95

Creative Services Software presents 32 bit terminal software for the Kantronics (PkTerm 3.0) and Timewave/AEA TNCs (PacTerm 3.0) and Soundcard Interfaces. This software is for the Windows operating system.

The software takes advantage of true multi tasking in Windows and uses the standard Windows interface for ease of use. From PSK-31, MFSK, MT63 and SSTY to CW, RTTY, Amtor, Pactor and VHF and HF packet, from single to dual port TNCs or your soundcard and its interface, it is now more fun to use the digital modes of amateur radio. You can log each contact with the built-in logbook. Requires AEA/Timewave Host Mode or Kantronics TNC Hostmode for TNC interface.

You don't even need a TNC with the soundcard only interface. Use with any of the popular soundcard interfaces, even the ones you build yourself. For soundcard only mode, requires soundcard interface like Hamhub or MFJ-127X interfaces.

Many manufacturers offer "coupons" or similar promotions.
Call or check our web page at http://www. hamradio.com for the latest manufacturer promotions.

PHONE PATCHES

Telephone Interconnects

Connect Systems manufactures a wide range of telephone interconnects and commercial equipment. Please contact HRO or visit the CSI Worldwide Web page at http://www.connectsystems.com

Full Duplex Interconnect

CS-800

Full Duplex Interconnect & Repeater Maker

This low cost automatic, full duplex patch converts your dual band base and dual band handheld or mobile into a cellular like duplex phone system. A built-in repeater maker can be enabled which makes the CS-800 suitable for private or club repeater/ auto patch use. The CS-800 comes with standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, secret toll override access code, built-in programming keypad and digital readout, tone / pulse dial out, and more. The only connections required are to the mike and speaker jacks of your rig. Fully FCC and DOC approved. **HRO Price 349.95**

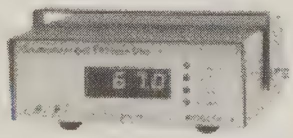
CS-900

Simplex Interconnect

This low cost automatic simplex patch converts your single band base and handheld or mobile into a powerful phone system. A 1/2 second digital voice delay prevents word clipping caused by transceiver and vox switching speed. It can be used base to mobile or through repeaters to extend range (phone-base-repeater-mobile and back mobile-repeater-base-phone). The CS-900 comes with many standard features unavailable in competing brands such as 90 memory speed dialer, redial, hookflash, CW ID, advanced toll restricts, 10 programmable toll override sequences, secret toll override access code, tone/pulse dialout and more. It can be user programmed using the built-in keypad with digital readout, over the air using DTMF, or from any telephone. The only connections required are to the mike and speaker jacks. Fully FCC and DOC approved. **HRO Price $399.95**

CD-2

Communications Decoder



The CD-2 decodes and displays 51 CTCSS tones and 112 DCS codes originating on the channel you are monitoring. DTMF tones are decoded and displayed as they occur and are replayed a second time slowly so that you can read high speed auto-dialers etc. The gimbol makes the CD-2 easy to mount in a vehicle so you can easily determine which CTCSS tone is needed. The RS-232 port can transport all decoded data to a computer. **HRO Price $199.95**

CD-2P Software

The CD-2p DOS-based application stores the time and date of each decoded CTCSS, DCS or DTMF from your CD-2. Accumulated data can be displayed or printed. Graphical displays show channel loading and more. **HRO Price $109.95**

Telescope

CELESTRON

For the first time in a commercial telescope, Celestron combines an integrated Global Positioning System with its legendary Schmidt-Cassegrain optics to deliver the most advanced telescope on the market today. The NexStar GPS series is the culmination of years of engineering research and development.

The internal GPS acquires information from orbiting GPS satellites, automatically downloading the date and time and pinpointing its exact location on Earth. That's all the information NexStar needs to orient itself with the sky and point to your first alignment star. No need to enter the date, time, longitude and latitude or even to know the position of north. Once aligned, NextStar has a key on the hand control to allow direct access to each of the catalogs in its user-friendly database. Messier objects, NGC galaxies, or planets – the NexStar database has over 40,000 celestial objects to choose from. The user-definable database filter limits the display only those objects that are above the horizon for your exact date, time and location.

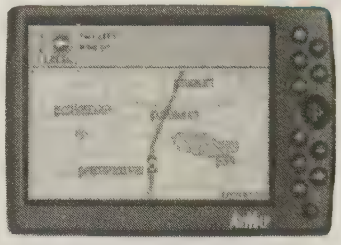
Celestron knows that the whole is greater than the sum of its parts. That's why Celestron is the only manufacturer to offer carbon fiber optical tubes, meticulously matched and hand-configured optical systems and high efficiency StarBright™ coatings.

NEW!

GPS

geosat²

NEW!



Car Navigator

The portable GeoSat2 Car Navigator allows you to determine your exact position – wherever you are – and to plan the best route to your destination. Once you enter a destination, a voice prompt gives you turn-by-turn directions, and will recalculate a new route almost instantaneously. Thanks to its extremely detailed maps, even the smallest town and most remote road are easy to find. GeoSat2 always leaves the final choice up to you. YOU decide which road is the best option, based on traffic and weather conditions.

Navigate easily to locations previously stored (up to 1,000 user points can be saved) that can be customized with unique icons and names. It combines the most advanced features of GPS/ WAAS satellite technology with a digital mapping system. Despite its light weight and small size (6.14" x 4.33" x 1"), the GeoSat2 boasts a large (5.6" diagonal) screen 30% larger than competitive models that allows you to see even the smallest details on a sunlight-readable color screen.

GeoSat2 works trouble-free, even in the worst weather conditions. Dedicated keys and the easy-to-use "pointing device" make navigating through the menus effortless. No installation needed! GeoSat2 can quickly be removed for security reasons, or transferred to another car. The unit operates via your car's 12v power supply.

The flexibility, precision, durability, and highly-detailed street map database make GeoSat2 a valuable traveling partner. Coupled with its simplicity of use and reliability, you'll wonder how you ever survived without it!

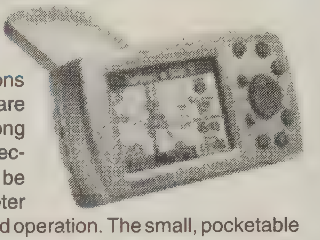
HRO Price $999.95

GARMIN

Garmin's Personal Navigator GPS receivers are low-cost and full-featured.
This family of satellite navigation equipment can guide you anywhere.

NEW!

Quest Pocket-Sized Street Navigator



The Quest is designed to provide automatic route calculations including voice guidance. Turn-by-turn instructions and detailed maps are presented on a bright, sunlight-readable color display. Detail street maps along with points of interest are transferred from the CD-ROM through a USB connection. Built-in memory provides 115 megabytes of map storage. Quest can be powered using the external speaker with 12 volt adapter or A/C power adapter (both are included with the unit). Built-in Lithium-Ion batteries allow for handheld operation. The small, pocketable and rugged design of Quest makes for the ultimate portable automotive GPS navigator. **HRO Price: $599.99**

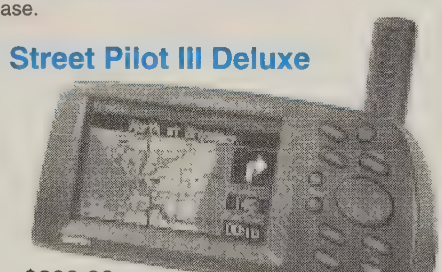
Street Pilot 2610

$999.99

HRO Discount Price

The 2610 features a touch screen and remote control. Performs route calculations with turn-by-turn directions and voice prompts. A color display automatically adjusts to light conditions. Download map detail using the included Map-Source City Navigator™ CD-ROM. Built-in patch antenna with MCX-type connector for optional external GPS antenna. Alphanumeric remote control. Indefinite data storage (no memory battery required). Integrate dash mounting system with quick release.

Street Pilot III Deluxe



$699.99

HRO Discount Price

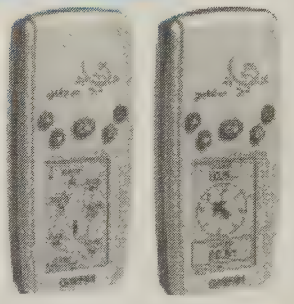
Street Pilot III Deluxe includes full coverage of the United States. Download maps from the included MapSource™ City Navigator™ CD-Rom to get comprehensive, street level detail within metropolitan areas. City Navigator™ includes millions of new streets for nearly every town in the USA. Canadian coverage has also been improved, although full coverage is not yet possible.

The Deluxe package gives access to all maps contained on the CD. Install the MapSource CD-Rom on your computer and enter a custom code that is included in the box to unlock access to all coverage within the U.S. and Canada.

This unit ships standard with a 128 megabyte card for map storage, a portable bean bag mount for complete mounting flexibility, a portable antenna, external speaker with 12 volt adapter, USB data card programmer, dash mount, PC interface cable, CD-ROM.

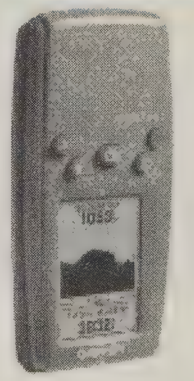
Geko™ Series

Personal Navigators



Gekos are the smallest, lightest (3 oz.), waterproof GPS units on the market–inexpensive, with sleek designs and simple operating systems.

Features	Geko 201	Geko 101
WAAS	Yes	No
Upload/Download	Yes	No
External Power Input	Yes	No
Waypoints	500	250
Altitude stored w/WPT	Yes	Yes
Routes	20	0
Legs per route	125	0
Saved Tracks	10	0
Tracklog Points	10,000	3,000
Datums	>25, 1 user	18
Number of Grids	17,1 user	11
Distance and Sun	Yes	No
World Time Zones	Yes	Yes
Games	Yes	No
HRO Price	$139.99	$99.99



Geko 301

$229.99

HRO Discount Price

The dark-gray Geko 301 has all the features of the 201 plus an electronic compass and a barometric altimeter. The altimeter determines your precise altitude and provides a 12-hour pressure-trend tool for gauging changing weather conditions.

- Accuracy less than three meters with WAAS.
- Storage for 500 waypoints/ 20 routes.
- Up to 16 hours of battery life (typical use) on two "AAA" batteries.
- External port for PC connectivity & power.
- Submersible 30 minutes in 1m water.
- Five outdoor games.

NEW!

eTrex™

Legend C & Vista C

The eTrex Legend C and eTrex Vista C bring exciting new features into the popular eTrex series including a 256 color, TFT display. These models, among the smallest handhelds, are housed in water proof cases. Each has a 12 channel GPS receiver, an ARM processor, high resolution liquid crystal display, and a rocker switch for quick, accurate map panning. All offer full navigation capabilities, satellite status, position format options and interface in English, French, German, Italian or Spanish. Load the optional Map Source to display addresses and businesses.

eTrex Legend - Color

Basemap for North, South and Central America. 8 megabytes of internal memory. Accepts download data from Garmin's entire line of MapSource CD-ROMS. **HRO Price $349.99**

eTrex Vista - Color

Same as the Legend plus a detailed basemap, built-in barometric altimeter, electronic compass, and 24 MB internal memory. **HRO Price $399.99**

eTrex™ Original

12 Parallel Channel GPS Receiver

The six-ounce eTrex™, only four by two inches, operates 180 hours on two AA batteries. It will maintain satellite lock even while in forest-like conditions. It stores up to 500 user waypoints with icons and has Garmin's exclusive Trac-Back™ to help you return home. Animated graphics help you identify waypoints. **HRO Price $129.95**

Fore Runner 201

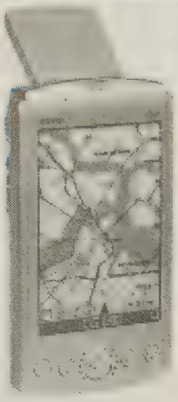
Garmin's 201 personal training device is for the athlete as well as the recreational walker or runner. Offers an easy-to-read display, adjustable wristband, and an integrated GPS sensor. Calculates speed, distance and pace information using GPS satellite data. With GPS the athlete can mark and follow routes. Includes performance-tracking software for PC's from Garmin's web site. **HRO Price $149.95**

GLOBAL POSITIONING SYSTEMS

Part Number	Description	2610	Street Pilot	GPS 12 CX	GPS II Plus	GPS III	Nav Talk	GPS III Plus	GPS V	e TREX	e MAP	HRO Price
	Antennas, etc											
010-10052-00	GA 28 Low profile remote marine antenna with 30' cable / BNC		*			*						$129.95
010-10052-02	GA 26 Low profile antenna, mag. & suction mounts, 8' cable, BNC		*		*	*						$99.95
010-10052-04	GA 26C remote Antenna								*			CALL
010-10052-05	GA 27C external antenna	*									*	$99.99
010-10061-00	GA 26 Trunk mount		*		*	*						$17.95
010-10062-00	GA 26 Flange mount		*		*	*						$17.95
010-10067-00	GA 28 Flange mount kit		*									$20.95
010-10139-00	GA 26 Suction cup mount		*		*	*						$17.95
010-10152-00	GA26 8 ft extension cable		*		*	*						$29.95
010-10157-00	8 ft extension for GA 27C										*	$38.95
011-00237-00	Handheld / portable antenna		*		*	*						$93.95
013-00002-00	30 ft low-loss antenna extension cable with connectors for GA 28		*									$107.95
	Bracket Mounts											
010-10048-00	Swivel mount bracket			*								$31.95
010-10111-00	Dash mount bracket				*	*			*			$31.95
010-10115-00	Bicycle mount kit			*								$17.95
010-10122-00	Bicycle mount kit				*	*			*			$25.95
010-10156-00	Swivel mount bracket								*			$12.95
010-10199-02	Dashboard mount base only		*									$17.95
010-10202-00	Dash mount										*	$39.98
010-10204-00	Handlebar mount										*	$17.99
010-10262-00	Suction cup mount										*	$39.98
010-10267-00	Bicycle mount									*		$17.99
	Cables, Etc											
010-10082-00	Power/data cable		*		*	*			*			$27.95
010-10084-00	Cigarette lighter adapter			*								$39.95
010-10085-00	Cigarette lighter adapter		*		*	*			*			$23.95
010-10086-00	Data cable			*								$22.95
010-10141-00	PC interface cable		*	*	*	*						$38.95
010-10142-00	Data transfer cable (unit/unit)		*	*	*	*						$46.95
010-10164-00	PC interface cable w/8v cigarette lighter adapter			*								$50.95
010-10165-00	PC interface cable w/cigarette lighter adapter		*		*	*						$45.95
010-10310-00	USB to Serial Conv. Cable								*			CALL
010-10477-00	PC/USB cable									C model		$14.95
010-10563-00	12v adapter cable									C model		$39.95
	Cases											
010-10117-01	Carry Case								*			$12.95
010-10220-00	Leather case w/view window						*					$24.99
010-10231-01	Deluxe carrying case	*										$32.00
010-10221-00	Soft holster						*					$19.99
010-10232-00	Carring case w/storage for cartridges (color map only)		*									$24.95
010-10234-00	Yellow protective case										*	$15.95
010-10235-00	Leather carry case										*	$24.99
010-10266-00	Neoprene carrying case									*	*	$14.99
010-10054-00	PC software and cable kit		*	*	*	*						$92.95
010-10203-00	12v cigarette power cord									*	*	$39.98
010-10205-00	Power cable (bare wire)									*	*	$22.85
010-10206-00	PC interface cable									*	†	$39.95
010-10227-00	Blank 8MB mem cartridge		*									$99.99
010-10226-00	Blank 16MB mem cartridge		*									$179.95
010-10277-00	A/C PC Adapter								*			$44.95
010-10477-04	128MB CompactFlash	*										$60.67
010-10477-05	256MB CompactFlash	*										$100.00
010-10215-00	US Roads & Recreational						*	*		*	*	$99.99
010-10215-01	MapSource World Map						*	*		*	*	$89.95
010-10215-02	Map Source US Topo						*	*		*	*	$116.95
010-10215-03	MapSource US Metro		*							*	*	$149.99
010-10215-13	MapSource US Metro w/ 8MB mem cart						*	*		*	*	$139.95
010-10332-00	Unlock Coupon entire USA/Canada								*			$95.95
010-10564-00	Auto navigation kit									C model		CALL

† Included with EMAP DELUXE and works with MAPSOURCE CD's to download waypoints and routes.
All Mapsource CD's will work with both eMap and eTrex, however, on eTrex, map detail will not be downloaded.

iQue 3600
Handheld PDA with Integrated GPS



The first PDA to include integrated GPS technology features the power of a Palm OS 5 and the dependability of a Garmin GP. Integrated software not only allows you to look up appointment or contacts, but also locates them on a color map and provides a route with voice guidance. Includes 32 MB of memory and a secure digital expansion memory slot. Has a protective flip cover, metal stylus, USB recharging HotSync® cradle, A/C power/charging adapter, city select, North America data CD-ROM, quick start quide, and installation/application CD-ROM including manual. **HRO Price: $549.99**

iQue 3200

NEW!

The iQue 3200 is a value-enhanced addition to the GPS family. With the power of Palm OS 5.2 organization and the dependability of Garmin GPS navigation, this multi-tasking tool not only reminds you of scheduled appointments, but also locates and routes you to them with turn-by-turn map cues and voice guidance commands. **HRO Price $529.95**

MapSource™

These accessory CD-Roms augment the basemap in the GPS III Plus, NavTalk, Street-Pilot, eMap, and GPS 12 Map. Data includes highways, roads, hiking trails, snowmobile trails, elevation contours, point elevation, geographic names, summits, churches and schools. Selectively load the maps for just the areas you need. You can browse these color maps on your PC using the zoom and pan functions.

- **US Roads and Recreation** for details of the US including nautical navigation aids.
- **WorldMap** for general coverage of the world.
- **US Topo** for terrain contour, elevation detail of US including Alaska and Hawaii.
- **MetroGuide USA** for Metro Guide in CD-Rom format.

Requires Windows 95, 98 or NT 4.0; 16MB-RAM; 10MB free hard disk storage; CD-Rom drive; 256 color display; mouse.

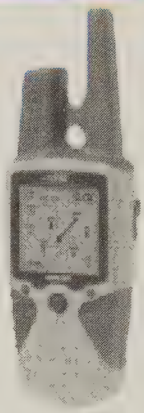
GARMIN

BOOKS / SOFTWARE

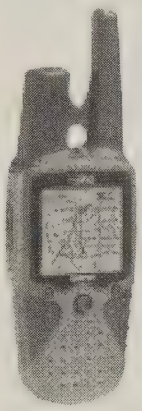
FRS / GMRS Transceivers with GPS

Rino 110 >

$169.95 – HRO Price



The Rino 2-way handheld radios provide the benefits of Family Radio Service and the extended range General Mobile Radio Service intigrated with Garmin's powerful 12-channel WAAS-enabled GPS receiver. Entirely waterproof, these handeld radios provide 2-way radio communications with transmission ranges up to 2 miles with 14 FRS channels and up to 5 miles with 8 GMRS channels and 8 GMRS repeater channels. With FRS, users can transmit their location allowing others to navigate to their position.



< Rino 120

$249.95 – HRO Price

Rino 120 includes a built-in basemap of North and South America. Using optional MapSource CD-ROMs, you can download up to 8 MB of additional maps.

Rino 130 >

$349.95 – HRO Price

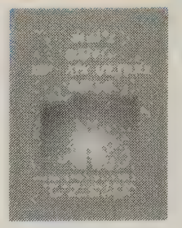
What sets the Rino 130 apart from the Rino 110 and 120 are the built-in electronic compass, barometric sensor, weather receiver and the 24 megabytes of internal memory. Receive up to 7 NOAA weather channels with weather alert tones. Unlike the graphic compass on the Rino 110 and 120 which requires movement to show a heading, the 120's built-in electronic compass will give a heading while the user is standing still. The barometric altimeter provides extremely accurate elevation and pressure information, which could assist in identifying weather trends and best fishing opportunities. Users can transmit their position with a simple button press, allowing others to navigate to their location. The Rino 130 also has a polling feature, which allows a user to manually request GPS location information from other Rino units. Users may select 1 of 38 sub-audible squelch codes for semi-private conversation. Also includes a voice scrambler and vibration mode for silent calls.

The Rino 130 GPS has a built-in basemap of North and South America. Built-in map detail includes cities, highways, inter-states, local thoroughfares and secondary roads within metro areas, interstate exit services, airports, rivers, lakes and coastlines. Using optional MapSource® CD-ROMs, users can download up to 24 megabytes of additional maps providing features for topography, bathymetric, street-level detail and much more. The Rino 130 can also be used with MapSource Recreational Lakes with Fishing Hot Spots®, BlueChart, MetroGuide® and US TOPO CD-ROMs.

Part Number	Description	HRO Price
010-10344-00	2.5 to 3.5mm Jack Adptr	$12.95
010-10347-00	Earbud w/Ptt microphone	$31.95
010-10346-00	Flexible ear receiver	$12.95
010-10345-00	Headset w/Boom mic	$19.95
010-10351-00	Bike mount	$17.99
010-10325-00	Smash Guard	$17.99
010-10117-01	Carry Case	$12.95
010-10326-01	PC data cable	$37.95
010-10326-02	PC data cable w/12V	$49.95
010-10326-00	12V adapter cable	$39.95
010-10350-00	Automotive mounting bkt	$39.95
010-10323-00	NiMh Battery Charger	$49.95

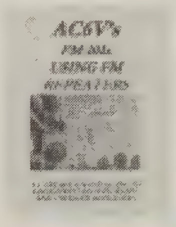
Study Aids

DXing 101



DXing 101 features the DXing advice of several noted DXers and technical gurus. It's true, practical advice for those just entering into HFing and the DXing world. **HRO Price $24.95**

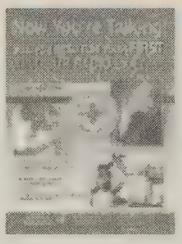
FM 101



Learn all about repeaters – the jargon, protocol, offsets, tones, Q signals, and more. Learn how to choose and use equipment. Understand the inner workings. Extensive glossery of terms. **HRO Price $12.95**

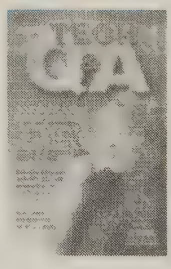
Study With ARRL

Now You're Talking!



This is Ham Radio's #1 license manual with everything you need to earn your first license. All of the material is explained in friendly, easy-to-understand chapters. Vivid illustrations and photos make learning fun and interesting. 5th edition, for exams beginning July 1, 2003. **Retail $19.95**

ARRL's Tech Q&A



Take the quick and easy path to your first ham license. Pass the 35-question Technician class examination by studying this question pool with brief, clear explanations. 3rd edition, for exams beginning July 1, 2003. **Retail $12.95**

GENVIDEO/Soft
Gen Class Video / IBM Exam
TECHVIDEO/Soft
Tech Class Video / IBM Exam (New)
NYT III
Study Guide– No-Code Tech License
TAGCLM General Class Manual
TAECLM Extra Class Manual
TFRB FCC Rule Book
YITMC Intro to Morse Code (audio CD)
YITMC Intro to Morse Code (cassette)

Scanner Software

SCANNER MASTER

for Uniden Scanners

WinScan 780

BC-780XLT

WinScan 780® Version 1.00 for Windows 95 / 98 /NT 4.0 / ME / 2000 Professional for Uniden BC-780XLT.
HRO Price: $69.95

WinScan 2.1

BC-245XLT &
BC-895XLT

Control either the Uniden BC-245XLT or BC-895XLT with one easy package.
HRO Price: $59.95

WinScan Sport

Sportcat 200

Progam the Sportcat 200 from a windows based PC.
HRO Price: $29.95

WinScan DP

BC-250D and BC-785D

Basic programmming software for the 250D / 785D.
HRO Price: $24.95

BUTEL

ARC780

For the Uniden BC-780.
HRO Price: $39.95

ARC250 / 785

For Uniden BC-785D / 250D.
HRO Prices: Basic $39.95
Pro w/ audio logging $69.95

AR2

For the Icom R2.
HRO Price: $29.95

AR3

For the Icom R3.
HRO Price: $39.95.

ARC5000

For the AOR AR5000.
HRO Price: $99.95

ARC8200

For the AOR AR8200.
HRO Price: $69.95

Cable for Uniden

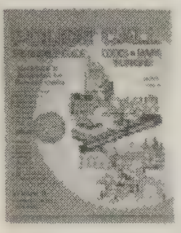
For the BC-780 / 785 / 252.
HRO Price: $8.95
For the BC-895.
HRO Price: $29.95

uniden®

SCANNERS

Scanner Books

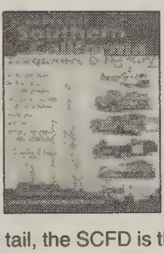
HRO stocks many books with frequencies for localities around the country. Contact your nearest HRO for details.



Police Call

Volume 9

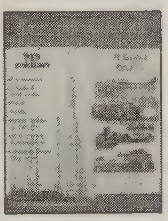
Frequencies for other uses: taxis, hospitals, public utilities, mall security, movie crews, newspapers, sports events, amusement parks, conventions, farm cooperatives, private investigators, hotels. Book covers CA, OR & WA, but the CD included covers the entire USA. **HRO Price: $19.99**



NEW!

Southern California Frequency Directory

Covering 10 Southern California counties in detail, the SCFD is the most up-to-date scanner information resource for the area. Organized by county for easy use, this 448 page directory includes frequencies, channel numbers, PL tones, trunked frequencies and maps. **HRO Price: $24.99**

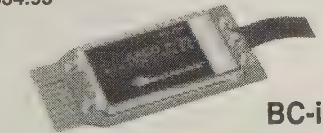


NEW!

Southwest Frequency Directory

(9th Edition)

The most up-to-date directory for Arizona has 256 pages of scanner frequencies, codes, aircraft, businesses, and talk-groups for public safety. Organized by county, it includes detailed coverage of the new Phoenix/Mesa digital trunked radio system. **HRO Price: $34.95**



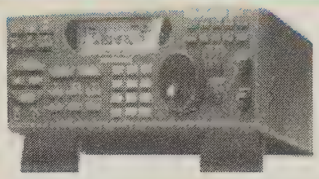
BC-i25D

Digital Accessory Card

$CALL – HRO Price

Add the BCi25D card to your Uniden BC780D or BC250 scanner to monitor APCO P-25 digital systems. With the digital card inserted you can monitor conventional, trunked (analog control channel, 3600 baud, and digital control channel), and mixed-mode APCO 25 Systems.

Scanners



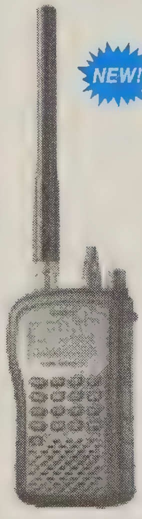
NEW!

BC-898T

Base / Mobile

$CALL – HRO Price

- Multiple channels - 500 in 10 banks.
- Frequency coverage 25-54, 108-174, 216-512, 806-956 MHz (excluding cellular).
- 1000 talk group ID's in 10 lists of 10 per bank.
- TrunkTracker III technology for motorola, EDACS and LTR systems.
- DCS/CTCSS rapid decode.
- S.A.M.E. weather alert – a code for your location will alert you to severe conditions in your area.
- Conventional and trunked search operations lets you locate transmissions not in the books.
- Priority operation.
- AC adapter, SC power cable and automotive power outlet plug.
- Programmable delay.
- Programmable search allows setting the upper and lower limits of the search.
- AM / FM / NFM modes.
- Frequency steps 5, 6.25, 12.5 and 25 kHz.
- 200 talk group skip memories.
- 100 search skip memories.



NEW!

BC-246T

Handheld

$CALL – HRO Price

- 1600 channels typical / 2500 maximum.
- Frequency coverage 25-54, 108-174, 216-225, 400-512, 806-956, 1240-1300 MHz (excluding cellular).
- Dynamically allocated memory.
- TrunkTracker III technology.
- Alpha tagging.
- S.A.M.E. weather alert.
- 10 custom search ranges.
- 10 preprogrammed service searches.
- Automatic repeater reverse.
- Close Call™ RF capture technology.
- DCS/CTCSS rapid decode.
- Pager skip of common frequencies during search and close call operation.
- Channel alert.
- Backlit display turns on with open squelch, when you press any key, or manually.
- PC control includes a PC cable to transfer information from the computer.

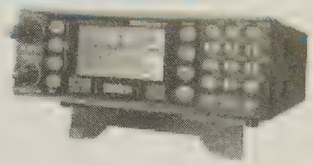
TrunkTracker Scanners

TrunkTracker III

BC-796D

$549.95

– HRO Price



The BC796D APCO 25 Digital Trunking Scanner connects you to the exciting world of scanning, covering both analog and digital trunking systems on conventional frequencies. Monitor Motorola Type I,II, IIi Hybrid and APCO Phase 1 Digital Systems, EDACS and DACS SCAT, LTR trunking systems, conventional digital APCO 25 frequencies, CB, GMRS, FRS, marine, business band, amateur radio, aircraft, FM and TV broadcasts.

Features 1000 channels, 1000 talkgroup ID's, multi-system tracking, included PC programming software and cable, 10 priority channels, priority talkgroups, priority plus scanning, CTCSS and DCS squelch modes, preprogrammed service search, data skip, SAME weather alert with FIPS, turbo search and scanner clone mode.

TrunkTracker III

BC-296D

$549.95 – HRO Price

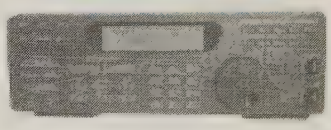
This APCO 25 Digital Trunking Scanner contains most of the features of the BC-796D. In addition, the BC-296D has a backlit holographic display, battery save, rechargeable NiMH battery pack and charger.

Mobile / Base

BC-895XLT

$229.95

– HRO Price



This is the industry's first trunk tracking base scanner. Search and monitor all the groups within a trunked system. Has 300 channels and includes 12 bands with aircraft, weather, and built-in CTCSS. Includes an RS232 port for computer control.

Trunking / Mobile Series

BC-350C

$129.95–HRO Price

The BC-350C has 100 channels, 14 band coverage, 800 MHz, prepro-grammed service search, local police, fire/EMS scan, marine, air, CB, one touch weather, backlit display and AC or DC operation.

BC-T8

$199.95 – HRO Price

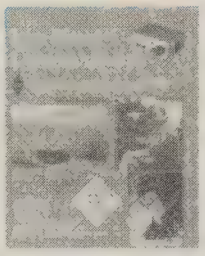
This rig has 250 channels, 14-band coverage, Trunk Tracker technology, pre-programmed trunked state highway patrol, highway patrol alert, local police, CB, weather, fire, EMS, 800 MHz, air, DOT and news, backlit keys and display, AC or DC operation.

BOOKSHELF

Amateur Books / Maps

Low Power Communication

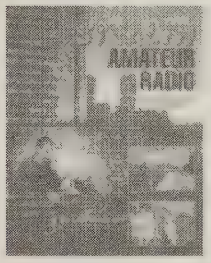
The Art and Science of QRP
by Richard Arland, K7SZ



Here's the low-down on low power operating, from selecting gear, to advanced operating techniques, antennas, emergency communications, solar power, and more! 208 pages. **HRO Price: $14.95**

Stealth Amateur Radio

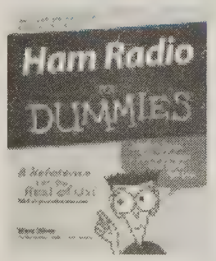
Operate from Anywhere



Kirk A. Kleinschmidt, NT0Z

Set up and operate a low power (QRP) station without calling attention to yourself. Install safe antennas, including indoor antennas. Build invisible antennas. Install and operate a portable station from most anywhere. Handle interference to and from your station to nearby consumer electronics devices. **HRO Price $14.95**

Ham Radio For Dummies



Hams do cool things like talking to folks around the world and helping with communications during emergencies. If hamming it up sounds like fun, here's the scoop, including licensing requirements and how to set up a station. And if you're already licensed, this book will help you start sounding (and feeling) like a pro!

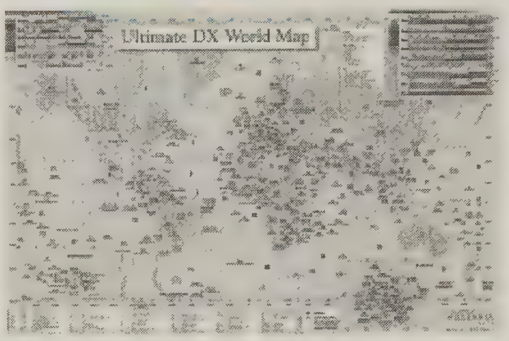
The Dummies Way
- Explanations in plain English.
- "Get in, get out" information.
- Icons and other navigational aids.
- Tear-out cheat sheet.
- Top ten lists.
- A dash of humor and fun.

HRO Price $21.99

Discover how to:
- Understand ham jargon.
- Communicate on the air.
- Prepare for the license exam.
- Set up a radio shack.
- Help in an emergency or natural disaster.
- Be a ham on the go.

MILLENNIA ARTS

Ultimate DX World Map™



Millennia Arts' wall map combines contemporary cartography with updated Amateur DX information. Extraordinary detail and quality make this an exceptional choice for reference or display or for a contest.

The Ultimate DX is a complete Mercator-style political world map with time zones. All countries have their DX call sign prefixes indicated. Comprehensive band plan charts for amateur radio allocation are conveniently located on the map for quick reference.

- Accurate DX call sign prefixes.
- Accurate world CW zones.
- Complete HF / UHF / VHF band plan charts.
- Amateur Radio common frequency guide.
- RST system details.
- International phonetic alphabet.
- Magnified views of the Caribbean & Europe.
- World Time Zone separations.
- All US regional codes.

FOUR MODELS		HRO Prices
MA36	24x36"	$13.95
MA36L	24x36" Laminated	$23.95
MA25	18.5x25.5"	$10.95
MA25L	18.5x25.5"Laminated	$19.95

CQ Publications

ARC2005	Amateur Radio Calendar 2005
BAUBAU	Building & Using Baluns & Ununs
LMOA	Lew McCoy on Antennas
Quadantennas	Quad Antennas
TPROM	Packet Radio Ops Manual

Ham Magazines

CQ	CQ Monthly
CQVHF	CQ VHF Quarterly
Popular	Popular Communications
QST	QST Monthly
MT	Monitoring Times Monthly
Scanning USA	Scanning USA
WRN	World Radio News

artsci BOOKS

U.S. Repeater Map Book

USRG 11th edition

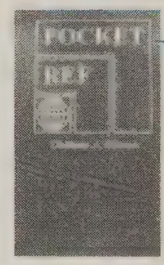
The PERFECT traveling companion for the radio enthusiast. Road maps show major highways and cities in every state. Amateur radio repeater frequencies are included. This is a must for truckers and travelers. Enhanced maps provide great highway detail. **HRO Price $9.95**

Guides to Technical Radio Modifications & Alignment Controls

RTM

Easy to follow instructions (with detailed drawings) to enhance almost all brands of amateur HT's and mobiles. Includes extended frequency plans.
Volume A (Icom, Kenwood, Scanners)
Volume B (Alinco, Standard, Yaesu, others)
HRO Price $19.95 each

Reference



HRO Price $12.95

Pocket Reference

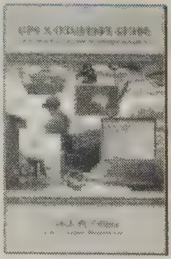
Third Edition

This concise all-purpose reference has hundreds of tables, maps, formulas, constants & conversions. More than 200 new pages and thousands of updates!

GPS Guide

GPS Navigation Guide

By Jack W. Peters



Using GPS with map, compass, computer & radio tracking. Use navigation skills for off-road events, Geocaching, and search and rescue. **HRO Price $17.95**

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

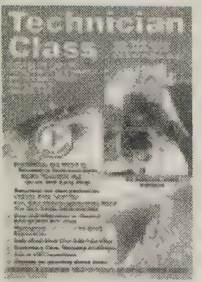
Gordon West
WB6N0A & W5YI

STUDY AIDS

Study with the Best!

Amateur Study Manuals, Audio Courses, & Software

Technician Class



Get into ham radio the right way – studying with Gordo! His *Technician Class* book reorganizes the Q&A into logical topic groups for easier learning. His new audio course – now on 6 audio CDs – brings ham radio to life and is a great study companion to his book. W5YI interactive study software includes pop-up explanations from his book, making learning easy and fun! Answer wrong and his explanation appears!

Technician Class book	GWTM	$15.95
Technician audio theory course on 6 audio CDs	GWTW	$34.95
Tech book + software pkg.	NCS	$39.95

Tech + General Value Package

Package includes both Gordo books – *Technician Class* & *General Class* and W5YI study software for Elements 2 and 3, along with the W5YI Morse code software program to teach you CW for your Element 1 test, and free Part 97 rule book. TPG $59.95

W5YI Ham Operator Software

Ham Operator

Software includes Elements 2, 3, and 4 for all written exams, with Gordo's explanations from his Tech, General and Extra study manuals, along with the W5YI Morse code software on CD-ROM, with free Part 97 rule book. All W5YI software has been upgraded to work on the latest operating systems.

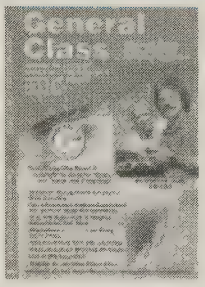
HOS (software only – no books)	$39.95
HOSB (software + 3 West books)	$79.95

Learn Morse Code for Your Upgrade to General & HF Fun!

6-tape audio courses recorded by Gordo!

Morse code 0-5 wpm	GW05	$29.95
Morse code 5-16 wpm	GW13	$29.95
Morse code 10-28 wpm	GW20	$29.95
CW refresher course 0-5 wpm on 2 audio CDs	GWCT	$14.95
W5YI code software 0-48 WPM	WMC	$14.95

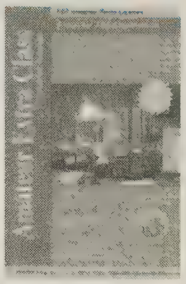
General Class



Upgrade to the HF bands by earning your General Class ticket using Gordo's new *General Class* book for the 2004-08 written theory exam. All the Q&A are reorganized into logical topic groups. His fun explanations make learning easy! Gordo's audio CD course is a great way to learn if you spend a lot of time in your car or truck. The W5YI interactive study software now includes Gordo's explanations from his book.

General Class book	GWGM	$17.95
General audio theory course on 4 audio CDs	GWGW	$24.95
General book + software pkg.	GUS	$39.95

Extra Class

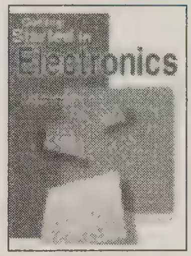


Let Gordo help you earn your top ham ticket – Amateur Extra Class! His book includes memorable answer explanations to help you learn the material and understand the correct answer. His audio theory course reinforces learning and is a great study companion to the book. The W5YI interactive study software now includes the explanations from Gordo's book and helps you prepare for that tough Element 4 exam.

Extra Class book	GWEM	$19.95
Extra audio theory course on 6 cassette tapes	GWEW	$29.95
Extra book + software pkg.	ECS	$39.95

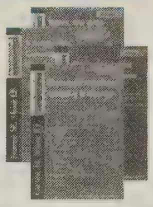
Let Forrest Mims Teach You About Electronics!

Getting Started in Electronics



A great introduction for anyone who wants to learn the fundamentals of electronics. Begin by learning about basic electronic components; study diodes and transistors. Explore digital and analog integrated circuits. Learn assembly tips for making temporary or soldered circuits. Includes 100 projects you can build, and great experiments that demonstrate how electricity works! Lots of great ideas for science fair projects! GSTD $17.95

Engineer's Mini Notebooks



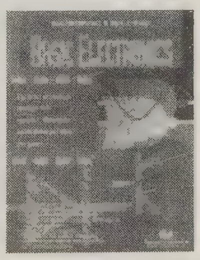
These 4 Mims classics teach hands-on electronics! Study and build 100's of practical circuits and fun projects. Each volume contains several of his famous Mini Notebooks. Great experiments and science fair ideas!

Vol. 1: Timer, Op Amp + Optoelectronic Circuits & Projects	MINI-1	$10.95
Vol. 2: Science + Communication Circuits & Projects	MINI-2	$10.95
Vol. 3: Electronic Sensor Circuits & Projects	MINI-3	$10.95
Vol. 4: Electronic Formulas, Symbols & Circuits	MINI-4	$10.95

Electronics Books

Want to learn more? See our *Basic Electronics* series!

Each of our 3 basic books takes you from fundamental concepts to solid understanding of the material. If you're a teacher, these books are for you & your students!



Basic Electronics
BELC $17.95
Basic Digital Electronics BDIG $17.95
Basic Communications (analog) Electronics
BCOM $17.95

Commercial License

Get Your FCC Commercial Radio License

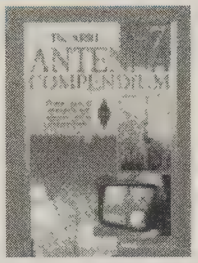
GROL-Plus book by Gordo & Fred Maia, W5YI, includes FCC Elements 1, 3, and 8 for MROP, GROL, *plus* Radar Endorsement. The best study manual for these valuable commercial licenses!

GROL-Plus book
GROL $39.95
GROL-Plus book + W5YI study software pkg.
GRSP $69.95

ARRL BOOKS

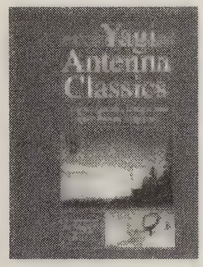
ARRL Antenna Compendium

Volume 7



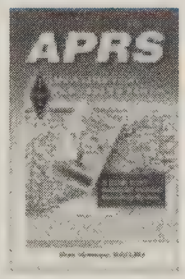
43 All new articles! You'll find 9 articles that deal with low-band antennas and operating, 4 on antennas for 10 meters and many more. Learn how to motorize a tower, how to safely put up a through-the-roof antenna system. CD-ROM included with propagation prediction software! **HRO Price $24.95**

Yagi Antenna Classics



This collection of articles covering all types of beam antennas was taken from QST, QEX, NJ and other ARRL publications. Written by some of the best known authors on the subject, the articles provide the reader with a historical perspective, novel ideas and computer optimized designs. **HRO Price: $17.95**

APRS Moving Hams on Radio and the Internet

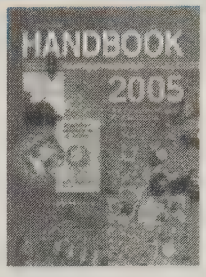


Your one stop for quick-and-easy iinstructions for installing and using the exciting new APRS software. Anyone with a packet station and computer can join the fun. APRS provides a real-time map display of participating stations. When used with a GPS receiver, it is ideal for tracking moving stations. Separate sections cover DOS, Windows and MAC platforms. Chapters include custom installation, map-making, harware requirements, and even specialized uses such as direction finding, telemetry and DX plotting. **$17.95**

QRP Power

Whether you've just been bitten by the urge to operate flea power, or you've already discovered just how much fun it is to operate with 5 watts or less, this is the book you've been looking for. It's crammed with projects you can build and resource information you can use. In addition to the best recent QRP-related articles from QST, QEX and The ARRL Handbook, there's a new, in-depth article on NN1G's popular 40-40 transceiver. **$12**

The ARRL Handbook for Radio Amateurs



The most complete update in a decade! Entire sections of this book were updated: analog and digital signals and components; working with surface-mount components; high-speed multimedia (HSMM); previously unpublished antennas and advice on baluns; satellites and EME, now with new phase 3E details; oscillators, DSP and software radio design; a new chapter with Internet tips for hams, wireless fidelity (Wi-Fi) and other wireless and PC technology.

Thorough coverage of theory, references and practical projects. More projects! Here is an unmatched source for building receivers, transceivers, power supplies, RF amplifiers, station accessories and antenna construction projects. Now featuring more antenna projects and a new 10-W, 60-meter SSB transceiver! There's something inside for experimenters of all skill levels.

Includes ARRL Handbook CD (version 9.0) – the fully searchable and complete book on CD-ROM (including many color images).

Softcover with CD $39.95
Hardcover with CD $54.95

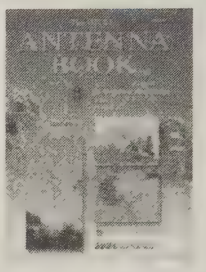
The ARRL 2005-06 Repeater Directory

Pocket-sized directory is the single most trusted source of VHF/UHF repeater listings.

- Thousands of FM voice and ATV repeater frequencies.
- Latest directory of Frequency Coordinators.
- Coverage for North, Central and South America, and some listings in Europe and the Middle East.
- Now including IRLP (Internet linked) nodes.
- Info on using CTCSS tones and Digital Coded Squelch (DCS) **$10.95**

The ARRL Antenna Book

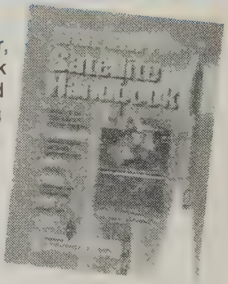
20th Edition



Hams and professionals will find projects and practical information on designing, building, and installing almost any imaginable type of antenna. Select and use the proper feed line and antenna tuner. Expanded coverage of low frequency antennas. Greatly expanded coverage of elevation angles needed for world-wide HF propagation. New chapters cover the fundamentals, including the effects of irregular local terrain, plus more information on mobile and maritime antennas. Software Included (MAC and PC). **Retail $39.95**

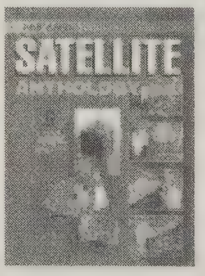
Satellites and Space

The Radio Amateurs Satellite Handbook



By Martin Davidoff, K2UBC (author of the highly acclaimed predecessor, The Satellite Experimenter's Handbook). The most comprehensive book ever written about amateur satellites! Long-time satellite operators and beginners will enjoy its in-depth coverage: setting up a station, choosing the right antenna for the right satellite, and tracking the "birds." Includes operating details for every active amateur satellite, the upcoming Phase 3D satellite, and all Amateur Radio operations from the US Space Shuttles (SAREX) and Russian Mir space station. Thorough appendices covering profiles of computer programs, Internet sites, FCC Rules, and a complete history of amateur satellite and space operations. **HRO Price $24.95**

Satellite Anthology, 5th Edition



Here are the best articles on the current (and future!) amateur spacecraft from QST, The AMSAT Journal, the World Wide Web and other sources. We've also included recent satellite columns from RadCom (Great Britain), Radio ZS (South Africa) and Amateur Radio (Australia). Includes specific operating details for the newest amateur satellites! **HRO Price $15**

Weather Satellite Handbook

A popular and easy-to-use reference for anyone interested in viewing our world from space. The revised and expanded 5th edition features an interface project that allows you to capture fascinating images from various weather satellites and HF WEFAX broadcasts (a kit is available). You'll learn how weather satellites function, how to build or modify your own receiving equipment and how to buy or build the right antennas. **$20.** **Companion software** (revised for the 5th edition of the book) available for IBM PCs and compatibles. **$10**

ARRL TECHNICAL BOOKS

HK	Hints and Kinks (16th edition)
ITRFD	Intro to Radio Freq. Design
LBD	Low Band DXing
MEM	Microwave Experimenter Manual
OM	Operating Manual
PDOYA	Yagi Design
RASH	The Radio Amateur's Satellite Handbook
REFLECTIONS	SWR Theory
RFE	RF Exposure and You
RFI	Radio Frequency Interference
RSGB-AWARDS	Awards Book
RSGB-OP MAN	Amateur Radio Operating Manual
RSGB-RCH	Radio Communication Handbook
RSGB-VHF	VHF / UHF Handbook
SA	Satellite Anthology
SEH	Satellite Experimenters Handbook
SSS	Spread Spectrum Source Book
TFRB	The FCC Rule Book (13th edition)
TLT	Transmission Line Transformers
TAH	ARRL 2000 Hardcover Handbook
WSH	Weather Satellite Handbook

ARRL LISTINGS

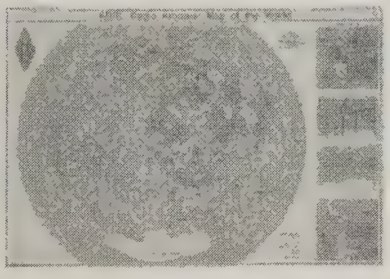
DXCC LIST	Official ARRL DXCC List
LB	Log Book
ND	Net Directory
RD	Repeater Directory

ARRL READING

CQGS	CQ Ghost Ship
DVQTH	Death Valley QTH
DXBD	DX Brings Danger
DXCC Companion	DX Guidebook
HFNH	Help for New Hams
MBQ	Murder by QRM
MORSE CODE	The Essential Language
NCJ	Bi-Monthly National Contest Magazine
NS	Night Signals
NN	Novice Notes
QRP NOTE	QRP Notebook
QST	Monthly Magazine of ARRL
SOSAM	SOS at Midnight
YVC	Your VHF Companion
ET	Easy Target Novel

ARRL MAPS

WM	World Map (Azimuthal)



WM-R	World Map (Robinson))
GRID ATLAS	Grid Locator Atlas
GRID MAP	Grid Locator Map
MONA	Amateur Radio Map of North America

ARRL ANTENNA BOOKS

AB	18th Antenna Book
ACVOL5	Antenna Compendium Vol. 5
ACVOL6	Antenna Compendium Vol. 6
RSGB-ANT	H.F. Antenna Book
RSGB-WIRE	Wire Antennas
YAD	Yagi Antenna Design

ARRL CD-Roms

ARRL Handbook CD for Radio Amateurs 2004

Version 5.0 for Windows and Macintosh*

HANDBOOK CD
2004

All the text and illustrations from the printed ARRL Handbook, on CD-ROM! Projects, antennas, and easy-to-read explanations of fundamental theory! Nearly every mode and device used by radio amateurs is covered. Versatile search capabilities take you to the exact information you need. Hear audio clips of many amateur radio modes. Print from the Handbook. Zoom in and out to see drawings, photos and text enlarged or reduced. Live World Wide Web links! **HRO Price $39.95**

*Some supplementary software utilities included for Windows and DOS only.

Software

TravelPlus for Repeaters

Make TravelPlus™ your traveling companion and you'll never be alone on the road. Locate ham radio repeaters along any US or Canadian travel route using this map-based software. Point and click. It's that easy. Includes the entire ARRL Repeater Database. **HRO Price: $39.95**

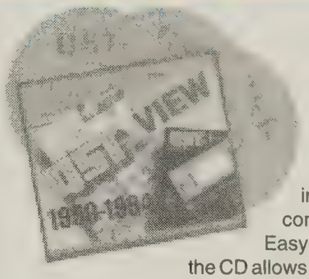
Answer Book

Ham Radio FAQ

Ham Radio
FAQ

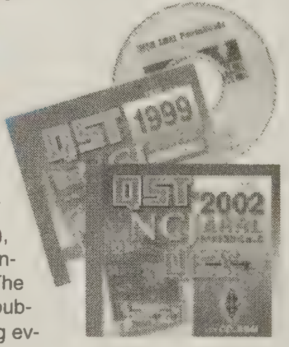
You've got questions . . .We've got answers! The ARRL Lab's Technical Information Service and "The doctor" have been answering ham's questions for nearly 8 decades. This book is a compilation of actual questions and their answers. Also included is a reference chapter. **HRO Price: $14.95**

QST View



Here are back issues of QST on convenient, space-saving CD-ROMs. All the ads, articles, columns and covers have been scanned to provide a black-and-white image to be read on your computer screen or printed. Easy-to-use software included on the CD allows you to: search for articles by title and author, select specific year and issue, and browse individual articles or columns. Available sets: 1990-94; 1985-89; 1980-84; 1975-79; 1970-74; 1965-69; 1960-64; 1950-59; 1940-49; 1930-39. Each CD set has an index to aid in finding the page or section you want to view or print. Requires Windows 3.1 or higher. **Each set $39.95**

ARRL Periodicals CD-ROM Sets



Each CD-ROM is a compilation of an entire year's worth of reading on one space-saving CD! You'll find: the full text of every QST (ARRL's membership journal), QEX (The ARRL Experimenter's Exchange) and NCJ (The National Contest Journal) published during a year–including every article, column, and product review; every drawing, table, illustration and photograph (many in color); more than 1000 advertisement images, indexed alphabetically by vendor and product. A powerful search engine finds your desired information quickly by article titles, call signs, names or just about any word. Bookmark your favorites. Windows printing and clipboard support, so you can print out articles or share them with other Windows applications.

Part Number	Description	HRO Price
CDROM 15-29	QST Magazine 1915-1929 Editions	$39.95
CDROM 30-39	QST Magazine 1930-1939 Editions	$39.95
CDROM 40-49	QST Magazine 1940-1949 Editions	$39.95
CDROM 50-59	QST Magazine 1950-1959 Editions	$39.95
CDROM 60-64	QST Magazine 1960-1964 Editions	$39.95
CDROM 65-69	QST Magazine 1965-1969 Editions	$39.95
CDROM 70-74	QST Magazine 1970-1974 Editions	$39.95
CDROM 75-79	QST Magazine 1975-1979 Editions	$39.95
CDROM 80-84	QST Magazine 1980-1984 Editions	$39.95
CDROM 85-89	QST Magazine 1985-1989 Editions	$39.95
CDROM 90-94	QST Magazine 1990-1994 Editions	$39.95
CDROM 95-99	QST Magazine 1995-1999 Editions	$39.95
CDROM 95	QST, QEX, NCJ, HR on CD 1995	$19.95
CDROM 96	QST, QEX, NCJ on CD 1996	$19.95
CDROM 97	QST, QEX, NCJ on CD 1997	$19.95
CDROM 98	QST, QEX, NCJ on CD 1998	$19.95
CDROM 99	QST, QEX, NCJ on CD 1999	$19.95
CDROM 2000	QST, QEX, NCJ on CD 2000	$19.95
CDROM 2001	QST, QEX, NCJ on CD 2001	$19.95
CDROM 2002	QST, QEX, NCJ on CD 2002	$19.95
CDROM 2003	QST, QEX, NCJ on CD 2003	$19.95

CD-ROMs

CLOCKS

Radio Amateur Callbook

CD-ROM 2005

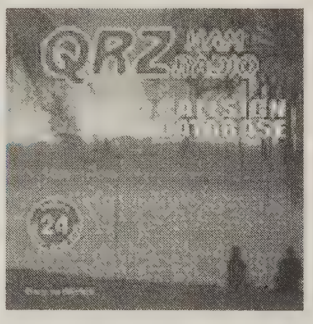
Summer Edition

HRO Price
$49.95

This is the most extensive radio amateur directory on the market. Incorporating both the North American and International editions of the world's most respected callbooks, it provides more than 1.6 million listings in more then 250 countries, islands, and dependencies. By including several countries not found in other directories, the Callbook offers unmatched world coverage.

- Windows/DOS platform.
- Data display by callsign, last name, city, license class, issue, and expiration dates.
- Search U.S. stations by callsign, last name, and city.
- Search international by callsign, last name, city. Text search by name, street, city, province, or region after selecting country.
- Unique sound output of Morse code alphabet can be used by the blind or anyone who wants to learn Morse code.
- Windows clipboard tool for single label or applications. Import data into logging spread sheet, word processor, or label printing program. Logging program interface available.
- Listings of clubs, "Then and Now" call letter changes, military, and silent keys.
- Text files listing prefixes by countries (40 zones), DXCC countries list, census of amateur prefixes, QSL bureaus, reciprocal operating agreements, 10-meter beacons, 6-meter beacons, international "Q" signals, and much more.

QRZ.COM



Ham Radio CD-ROM

Version 24

HRO Price $19.95

Use the QRZ callsign data base with several ham radio logbook utilities. QRZWIN call sign search-and-retrieval software allows easy access to more than 600,000 names and addresses of US and Canadian hams. The full name, address and FCC license information is included with each record. QRZWIN provides editing and printing functions which make custom mailing lists easy. Import the information to your favorite word processor for advanced formatting and list processing. QRZ features an open database with documentation so users can create their own custom applications. Also on the CD: the complete text to FCC approved license examinations, questions and answers, current rules and regulations, and 100's of shareware utilities. For use with Windows 3.1, Windows 95, or DOS software.

BUCKMASTER

HamCall™ CD-ROM

HRO Price $50.00

HamCall™ contains more than 1,623,000 Us and International callsigns on one CD-ROM updated every month. When you buy a HamCall CD-ROM, it will contain the latest listings at that time. Your purchase entitles you to a FREE password to access the HamCall Internet search service for a full 6 months. This lets you search by callsign, name, address, class and more.

- Run HamCall from your hard drive.
- Ability to skip already printed labels.
- Double click any address to send email or a web address to visit it.
- Add your own notes to any callsign.
- Print entire field search results (US records only).
- Calculates short and long path distance and bearing.
- Choose display font and color.
- Shows country flag and map.
- Shows CQ, ITU zone and continent.
- History list shows each call sign entered..
- View and search internet profiles for more than 35,000 hams.
- Search for club, military, RACES, vanity and silent keys.
- Over 122,000 email addresses.
- Latitude/longitude for more than 90% of US and DX addresses. US lat/long is calculated from the street address for precision down to a few hundred feet.
- Easy to use main menu.
- Data displayed includes: call sign, name, address, license issue date, license expiration date, birth date, previous calls, previous class, grid square, county, time zone, area code, email address, QSL manager and WWW home page.
- Edit information, change addresses, add new records, delete edited records, add email addresses, phone numbers, fax numbers and add your own notes.

GEOCHRON

Computer Clock

World Watch™ & Screen Saver

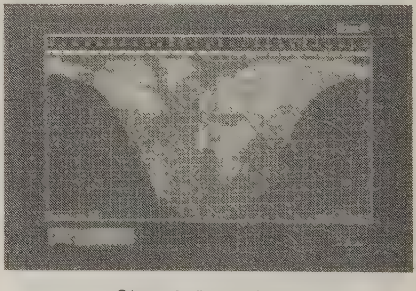
HRO Price $49.95

Keep time with the world. With Geochron World Watch Time Piece for Windows®, just glance at your computer screen to see whether the rest of the world is open for business. The current time for any city in the world is displayed in an attractive graphic. You can even set it up as a World Watch Screen Saver. Customize the display using various maps, user-defined cities, and map settings. The graphic shows you instantly which parts of the world are in sunlight and which are dark. Individual clocks across the bottom of your screen display local time for any locations you select. International Daylight Savings Time adjusts automatically. With orders of 20 or more units, the Geochron World Screen Saver can be customized to show your company name and logo. A pull-down menu allows further customizing. Available for Microsoft Windows® 3.1 and above. Windows '95/98/NT/2000 compatible.

Wall Clock

Standard GEOCHRON Global Time Indicator

A "must item" for a First Class Ham Shack.



Size: 34" x 22" x 5"

Geochron is a true global time indicator. At any moment, Geochron displays the correct time everywhere in the world – the week, date, the sun's declination and distribution of daylight and darkness on the earth's surface.

Geochron is available in four (4) models and a multitude of housing finishes and trim colors. Packaged for "drop shipment" anywhere in the world via UPS or DHL. Geochron can be surface mounted on the wall like a picture or recessed using optional mounting brackets.

Call HRO for special pricing opportunities.

Alinco puts the X in Xcellence!

DJ-C7T 2m+440 "Pocket" HT

Meet the "new generation" mini-HT! Internal speaker with great audio, 200 memories, VFO, Memory & Scan modes, CTCSS encode +decode, AM airband RX, wideband FM broadcast, 300mw output, SMA antenna port, Lithium ion battery, cloning feature, split function and more! ***Xtremely versatile dual-band HT.***

DJ-V5TH, 2m/440 HT*

Great 2m/440 TX & RX, xtended RX range from 76 ~ 999 MHz, wide band FM, alpha display, 200 memories, CTCSS & DCS encode+decode, 5 watts output, compact size, 4 scan modes, split-band ops, auto-dialer, 13.8 VDC direct input. ***Xcellent performer!***

DJ-196T (2m), DJ-296T (222 MHz), DJ-496T (440 MHz) HT

Backlit keys, alpha display, 40 memories, CTCSS and DCS encode+decode, autodial, 13.8 VDC input, and more! High-power battery is standard. ***Xtra handy!***

DJ-S40TD 440 MHz HT

Pocket HT features 500 mw output on AA cells, up to 1 watt using an optional NiMH battery. 100 memories, CTCSS encode+decode, SMA antenna, great audio, theft alarm and more! ***Xtremely small but packs a punch.***

DR-605TQ 2m+440 FM Mobile/Base

Xtra value! 50 watts VHF/35 watts UHF, 51 memories/band, crossband repeat, 430 ~ 449.995 range allows for satellite comms, dual watch. ***Check the LOW price!***

DR-135T/TP MKII (2m), DR-435T MKII (440 MHz), DR-235T (222 MHz) Mobile/Base

DR-135 includes AM Airband RX. All models have 100 memories, ignition key on/off, theft alarm, large 7 character alpha display, optional internal TNC can be used for packet or APRS™, 9600 packet mode, front data/GPS input, rear DSUB9 connector, H/M/L power out, autodialer, CTCSS and DCS encode+decode, backlit mic, ***Xtra rugged!*** Accepts optional digital voice communications board.

DJ-596T MKII 2m+440 HT

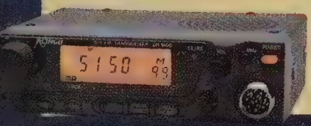
100 memories, alpha channel labels, NiMH battery, CTCSS and DCS encode+decode, WFM+NFM, theft alarm, 6 ~ 16 VDC input, illuminated keys and display, autodialer, full coverage of both bands, Xpanded receive; optional digital voice communications board and more! ***Xtend your abilities!***

DR-620T 2m+440 Mobile/Base

Xceptional features! Remotable head, speaker faces up or down, changeable color alpha display, 200 memories, H/M/L output, V/U, V/V, U/U, WFM and AM Air Xtended RX, TCXO, theft alarm, ***options include TNC or digital voice module, remote mount kit.***

DR-M06TH 6m/20 watts FM Mobile/Base

"Magic band" Xcitement with local and DX FM contacts, simplex or through repeaters. ***Includes CTCSS encode and 100 memories.***



DX-70TH (100w) HF+6m Mobile/Base/Portable

160 ~ 6m Amateur band TX in all modes, Xtra coverage RX from 150 KHz ~ 30 MHz and 50 ~ 54 MHz. Remotable face, 100 memories, 2 VFOs, speech compressor, SSB, CW and AM narrow filters, fullbreak-in, multi-function control and MUCH more! ***Optional Xcessories include EDX-2 wire antenna tuner & DM-330MVT power supply.***

DX-77T HF Base/Portable

Xcellence at a great price! 160 ~ 10 meter Amateur band TX all modes; 500 KHz ~ 30 MHz general coverage RX. Clean, clear audio, low noise floor from DDS, 100 memories, easy to operate. ***Speech compressor, CTCSS encode for 10m FM operation, CW filter.***

www.ALINCO.com

Distributed in North America by Ham Distribution, Inc., 15 South Trade Center Pkwy, #B5, Conroe, Texas, 77385. Phone: 936-271-3366. Fax: 936-271-3398.

Products intended for properly licensed operators. Permits required for MARS use. CAP use subject to equipment approval. Specifications subject to change witout notice or obligation. Performance specifications only apply to amateur bands.
*Cellular blocked in USA. Unblocked versions available to qualified users; documentation required.

ULTRA-RUGGED, SUBMERSIBLE TRI-BAND MAGNESIUM HANDIE!

Own the brightest star in the Ham Radio Galaxy! The exciting new YAESU VX-7R sets new standards in ruggedness, water resistance, and versatility, and its memory capacity is unparalleled. Own the VX-7R, and you'll own the best.

TRUE DUAL RECEIVE (V+V/U+U/V+U/HAM+GEN)

WIDE-RANGE RECEIVER

MAGNESIUM CASE

SUBMERSIBLE (3 feet for 30 minutes)

OVER 500 MEMORY CHANNELS

MIXED TONE (CTCSS/DCS) CAPABILITY

INTERNET KEY FOR ACCESS TO WIRES
Wide-Coverage Internet Repeater Enhancement System

YAESU
VFO 446.000
VFO 145.000
NFM
SUBMERSIBLE VX-7R
MAIN
SUB
MON F
BAND
HM/RV
V/M

SHORTWAVE BROADCAST MEMORY BANK

WEATHER BROADCAST MEMORY BANK WITH "SEVERE WEATHER" ALERT

MARINE BAND MEMORY BANK

MULTI-COLOR STROBE LED

LOW-POWER 222 MHz TX (U.S. version)

RUBBER CASE PROTECTOR

VX-7R

50/144/430 MHz 5W FM Transceiver

Actual Size

For the latest Yaesu news, visit us on the Internet:
http://www.vxstdusa.com

Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.

YAESU
Choice of the World's top DX'ers℠

Vertex Standard
US Headquarters
10900 Walker Street
Cypress, CA 90630 (714)827-7600

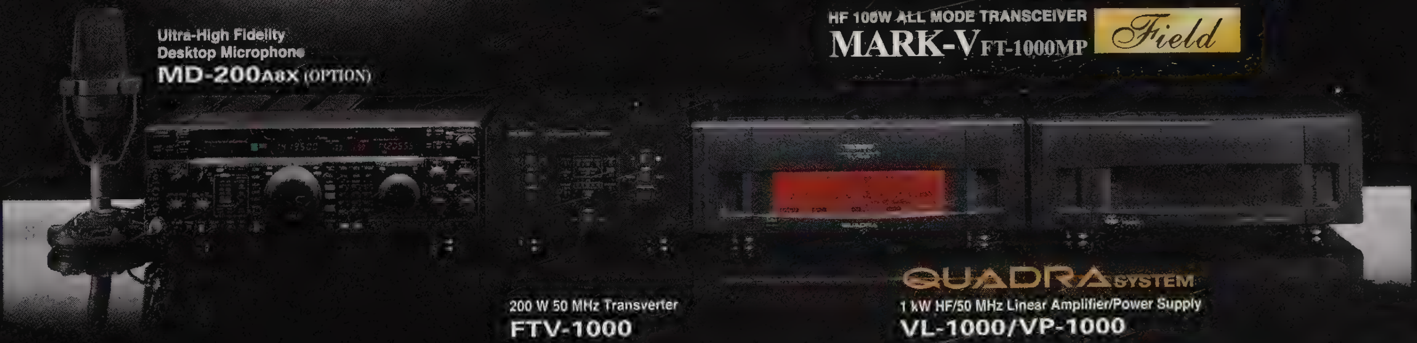
One Performance Standard, Two MARK-Vs

When the bands are crowded, and your antennas are world-class, you deserve the best total transceiver package in order to carry the day. Not performance measured in a quiet lab somewhere; you need real-world, time-proven performance crafted for appreciation by the world's most demanding DX competitors. You need a MARK-V FT-1000MP.

200W HF 200W ALL MODE TRANSCEIVER **MARK-V** FT-1000MP

The international standard of excellence. choice of the world's top DXers: the MARK-V. Now available in a 100-Watt version with self-contained power supply.

HF 100W ALL MODE TRANSCEIVER **MARK-V** FT-1000MP *Field*



Ultra-High Fidelity Desktop Microphone
MD-200A8X (OPTION)

200 W 50 MHz Transverter
FTV-1000

QUADRA SYSTEM
1 kW HF/50 MHz Linear Amplifier/Power Supply
VL-1000/VP-1000

YAESU
Choice of the World's top DXers℠

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US Headquarters
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NO COOLING FAN
COOL AND QUIET 65 W OPERATION

Yaesu's FT-2800M, the most ruggedly-built 2-meter amateur transceiver ever, provides 65 Watts of power along with Yaesu's renowned bullet-proof receiver front end. Direct keypad frequency entry, Alpha-Numeric Memory System, the high power output, and unsurpassed ergonomics make the FT-2800M an operator's dream come true!

New Ultra-High-Dissipation Heat Sink Design

The all-new heat sink of the FT-2800M provides more effective cooling than any other design, allowing long transmission periods without dangerous heat build-up or power reduction due to thermal protection.

High power output, a huge, easy-to-read display, and one-touch WIRES™ Internet Linking Access capability are yours with the exciting new FT-2800M.

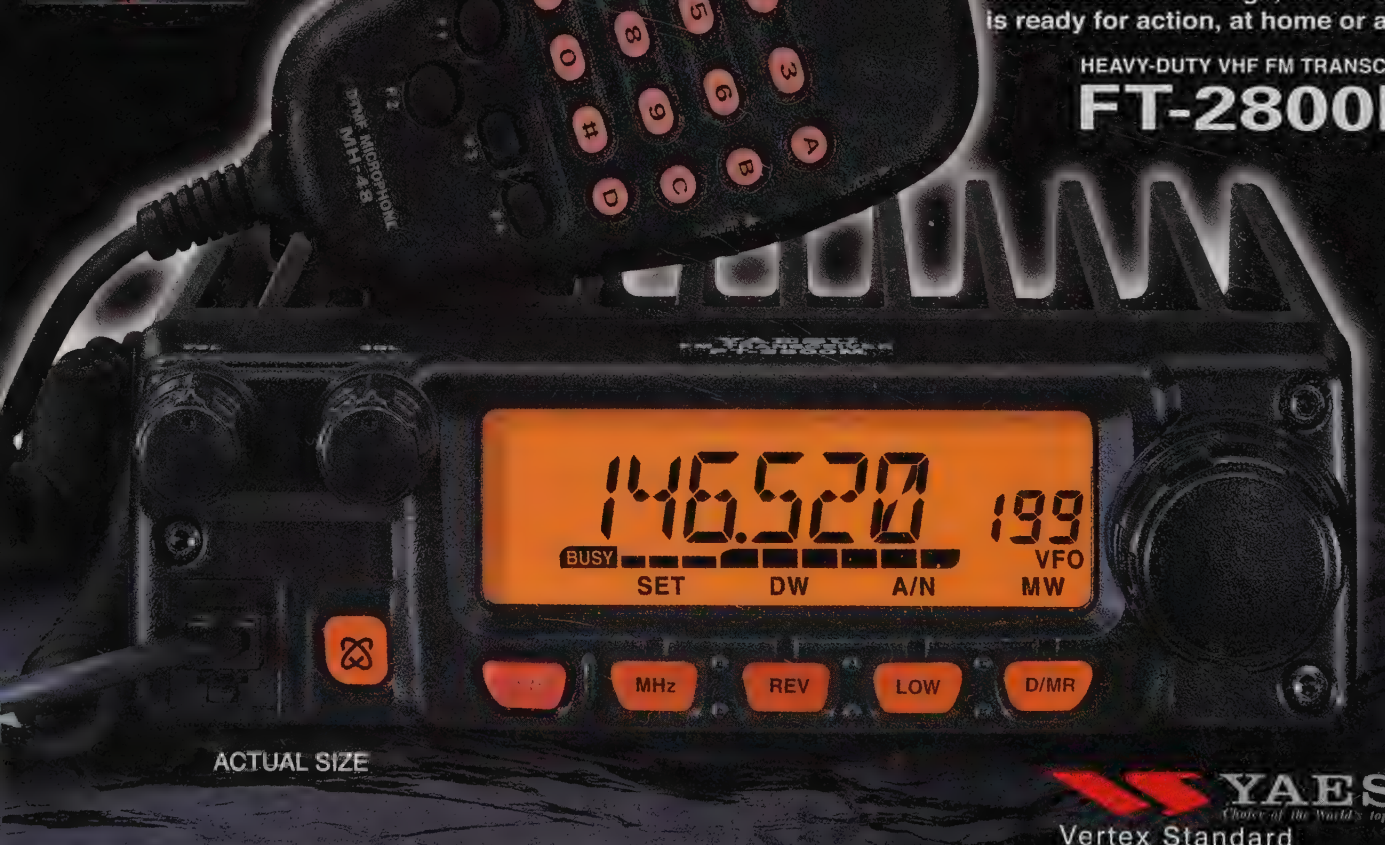
On transmit, the 65 Watts of true FM power output provides you with excellent coverage and superb voice clarity. On receive, you get extended coverage of 134-174 MHz, with a special memory bank dedicated to the NOAA Weather Broadcast Channels (U.S. version only).

Built to the exacting requirements of both the commercial radio industry, as well as the U.S. military's MIL-STD 810, the FT-2800M is constructed using an aluminum diecast chassis/heatsink assembly, providing outstanding mechanical and thermal stability for the internal components.

With superb ergonomics to go along with its stout RF design, the FT-2800M is ready for action, at home or away!

HEAVY-DUTY VHF FM TRANSCEIVER

FT-2800M



ACTUAL SIZE

YAESU

Choice of the World's top DX'ers

Vertex Standard
US Headquarters
10900 Walker Street
Cypress, CA 90630 (714)827-7600

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http://www.vxstdusa.com

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YAESU
DMR
145.500
FM
SUBMERSIBLE VX-6
SCN BND DN
BAND
EMG P/H
HM/R
LK TX PO
STEP
1
ARTS
4
PAGER
7
CODE
2
SKIP
5
EAI
8
DTMF
3
RPT
6
SP BNK
9
MODE
SET
0
DW MT
V/M

Conquer the Elements!

Ideal for the most demanding field use, the exciting new YAESU VX-6R features wide receiver frequency coverage, JIS7 submersibility weatherproofing, the Emergency Automatic Identification (EAI) system for rescue operations, and ultra-simple keypad access to the features you need now!

- ■ Compact size, utilizing a rugged case with weatherproofing O-rings, rated to JIS7 submersion specifications (immersion to 3 feet for up to 30 minutes).
- ■ High-capacity (1400 mAh) FNB-80LI Lithium-Ion Battery Pack provides a typical 5-Watt operating time of 7 hours.*
  *(144 MHz, duty cycle of 6 minutes TX, 6 minutes RX, 48 minutes standby)
- ■ One-touch Direct Memory Recall (DMR) access to most important memory channels (similar to channel access on a car stereo).
- ■ Large concentric control knobs for easy adjustments while wearing gloves.
- ■ Wide frequency coverage: 504 kHz – 998.99 MHz (cellular blocked and non-restorable).
- ■ 900 Memory Channels with alpha-numeric labels, assignable into 24 Memory Banks.
- ■ Internal temperature sensor built in, with barometric pressure display via optional SU-1 module.
- ■ External DC operation capability while charging battery pack.*
  * Transmission not possible when just using charger connections.

Actual Size

144/430 MHz* Dual-Band Submersible FM Transceiver

VX-6R

*222 MHz band @ 1.5 W included.

Submersible and Rugged

Magnesium rugged, feature packed top of the line

50/144/430 MHz FM TRIPLE BAND DUAL RECEIVE

5 W

VX-7R/RB

Field-ready, compact, and easy to use

144/430 MHz FM DUAL BAND

EAI

5 W

VX-6R

Ultra-Rugged

Rugged Dual-Band HT with EAI

144/430 MHz FM DUAL BAND

EAI

5 W

FT-60R

Ultra Compact

Tiny yet tough, and feature-packed

144/430 MHz FM DUAL BAND

1.5 W

VX-2R

EAI : Emergency Automatic ID

YAESU
Choice of the World's top DX'ers

Vertex Standard
US Headquarters
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http://www.vxstdusa.com

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Get "Back to Basics" with YAESU's New FM Dual Band Mobile
One-Touch Operation / Wide Receiver Coverage Included

High Power Output
(50 W VHF/40 W UHF)

Wide Receiver Coverage
Including AM Aircraft Reception, NOAA Weather Alert Broadcasting* *USA Version

Five One-Touch "Hyper Memory"
Transceiver Configuration Keys

Over 1000 Memory Channels
with Alpha-Numeric Labels, Twenty Memory Groups

WiRES™ Internet Linking Compatibility

144/430MHz
DUAL BAND
VOL
SQL
9 99
ENC
446.000
BUSY
1
2
3
4
5
MHz PRI
TONE HM/RV
LOW ACC
BAND SET
V/M MW
SCAN SEL
S.SCH ARTS

ACTUAL SIZE
*Simulated LCD display

YAESU FM Mobile Series

QUAD BAND
DUAL RECEIVE
29/50/144/430MHz
QUAD BAND

FT-8900R
29/50/144/430 MHz FM QUAD BAND TRANSCEIVER

DUAL BAND
DUAL RECEIVE
144/430MHz
DUAL BAND

FT-8800R
144/430 MHz FM DUAL BAND TRANSCEIVER

DUAL BAND

FT-7800R

144/430 MHz DUAL BAND FM TRANSCEIVER

YAESU
Choice of the World's top DX'ers

Vertex Standard
US Headquarters
10900 Walker Street
Cypress, CA 90630 (714)827-7600

For the latest Yaesu news, visit us on the Internet:
http://www.vxstdusa.com

Specifications subject to change without notice. Some accessories and/or options may be standard in certain areas. Frequency coverage may differ in some countries. Check with your local Yaesu Dealer for specific details.

Extreme ruggedness, outstanding audio, ease of operation, and new emergency features: The new YAESU FT-60R Dual-Band Hand-Held has it all!

144/430 MHz
FM DUAL BAND

Designed for the rigors of outdoor use, the FT-60R 144/430 MHz FM Hand-Held includes new Enhanced Paging & Code Squelch (EPCS) and Emergency Automatic Identification (EAI) systems that are ideal for Search-and-Rescue operations. Wide receiver coverage, commercial-grade audio quality, and the most flexible CTCSS and DCS features on the market make the FT-60R the expert's choice for Dual-Band communications!

Actual Size

YAESU RUGGED HANDHELD SERIES

50/144/430 MHz
FM TRIPLE BAND
DUAL RECEIVE

5 W Ultra-Rugged Magnesium Case
Submersible (3 feet for 30 minutes)
VX-7RB/VX-7R

50/144/430 MHz
FM TRIPLE BAND

5 W Heavy Duty Aluminum Diecast Case
VX-5R/VX-5Rs

144/430 MHz
FM DUAL BAND

1.5 W Ultra Compact
VX-2R

144/430 MHz FM
DUAL BAND HANDHELD
FT-60R

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In the field, or on the way there, Choose the YAESU "HF Mobility" Series!

FT-897D
HF/50/144/430 MHz
100 W All Mode Transceiver
(144 MHz 50 W/430 MHz 20 W)

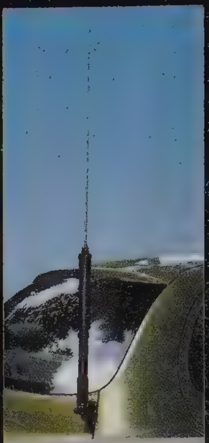
TCXO DSP 60 m Band

- High Stability TCXO Built In (0.5 ppm @ 77° F/25° C) for rock-solid PSK31, SSTV, or other data modes.
- Improved 1st IF Roofing Filter for enhanced operation in crowded bands.
- Compatibility with optional MH-59A8J Remote Control Microphone.
- Built-in DSP (Digital Bandpass Filter, Digital Noise Reduction, Digital Notch Filter).
- 32-Color Liquid Crystal Display.
- Optional ATAS-120 Auto-Tune and ATAS-25 Manual-Tune Antennas.
- Optional YF-122CN 300 Hz Collins® Mechanical CW Filter.

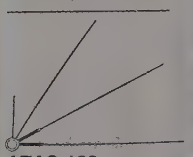
FT-857D
HF/50/144/430 MHz
100 W All Mode Transceiver
(144 MHz 50 W/430 MHz 20 W)

DSP 60 m Band

- Built-in DSP (Digital Bandpass Filter, Digital Noise Reduction, Digital Notch Filter).
- Improved 1st IF Roofing Filter for enhanced operation in crowded bands.
- Optional MH-59A8J Remote Control Microphone.
- 32-Color Liquid Crystal Display.
- Optional ATAS-120 Auto-Tune and ATAS-25 Manual-Tune Antennas.
- Optional YF-122CN 300 Hz Collins® Mechanical CW Filter.

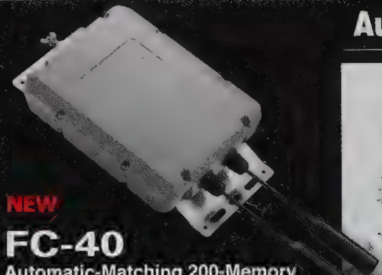


Mobile Auto-Resonating 7 ~ 430 MHz
ATAS-120
Active Tuning Antenna System (no separate tuner required).



ATAS-120
VHF/UHF Base Radial Kit ATBK-100.

Automatic Matching for FT-897/857 Series Transceivers



NEW
FC-40
Automatic-Matching 200-Memory Antenna Tuner

WATER PROOF

- Compatible with all versions of FT-897/857, and requires only two supplied cables (RF and Control) for interconnection to transceiver!
- Required Drive Power: 4 ~ 60 Watts. Maximum TX Power: 100 Watts.
- Typical Matching Time: Less than 8 seconds.
- During Matching, less than 0.25 Watts will be radiated to reduce QRM.
- 200 Match-Data Memories for instant "refresh" when returning to previously-used frequencies.
- Operational on 1.8 ~ 54 MHz when used with 66' (or longer) wire, or 7~ 54 MHz with standard 8.2' whip antenna (wire/whip antenna not supplied).
- Compact Size (9" x 6.9" x 2.2" WHD) and Light Weight (2.65 lb.).

ATAS MICRO Manually-Tuned High-Performance Portable Antenna ATAS-25

Add or remove aluminum elements for different bands.

- Slide resonating tube up and down for coarse tuning, then rotate tube for precise matching on your operating frequency.
- Mounts on standard camera tripod screw for quick, sturdy portable installation (tripod not included).
- Breaks down to less than 2' lengths, and weighs 2.1 pounds (plus tripod)-ideal for portable use!
- Attach supplied 144/430 MHz radials and use base section for 144/430 MHz operation.
- Capable of full 100 W operation with FT-857D/FT-897D.

Frequency Range: Amateur Bands 7 – 430 MHz
Power Capability (50% duty cycle, 1 min. TX/1 min. RX): HF/50 MHz CW/SSB 100 W
AM 50 W
144/430 MHz 50 W

Size: 7.2' (2.2m) maximum, 2' (0.6 m) collapsed for packing.
Weight: 33 oz. (930 g)
Included Accessories; HF wire radials, 144/430 MHz radials, Allen wrench. Not included: coaxial cable, camera tripod, QSL cards!

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REAL PERFORMANCE, REALLY PORTABLE

The World's Best Selling HF Portable, For Good Reasons!

60 m Band Included
NEW
YAESU
VFOa USB
50.110.00
A/B A=B SPL
HOME
SEL
V/M
LOCK
PWR
AF-SQL/RF
DWN
FST
UP
YAESU
DYNAMIC MICROPHONE
MH-31

Actual Size

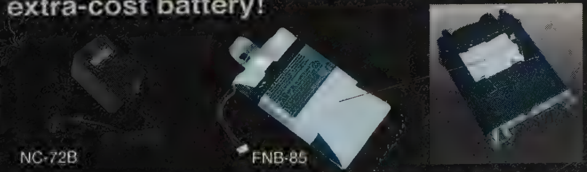
FT-817ND: Exclusive Features Among HF Portables

SMALLEST HF PORTABLE

It's the smallest HF/VHF/UHF transceiver in the market: 5.3" x 1.5" x 6.5". Compare this and its incredibly light weight (2.6 lb.) to other bulky "portable" rigs that are really large mobiles in disguise!

LONG LIFE Ni-MH BATTERY PACK INCLUDED

The FT-817ND is fully operational using the supplied internal Ni-MH Battery Pack and Charger—no need to use an external extra-cost battery!


NC-72B
FNB-85

For emergency work, an optional Alkaline Battery Tray allows operation using "AA" cells!

OUTPUT POWER: 5 WATTS

You may select up to five Watts of transmit power, using the supplied internal battery!

HF/VHF/UHF ALL MODES

With HF, VHF, and UHF capability, the FT-817ND brings you worldwide HF DX, local FM repeaters, mountaintop portable VHF DX, FM satellites, and easy capability for working astronauts on the International Space Station!

ATAS-25
Manually-Tuned Portable Antenna

ULTRA COMPACT
ALL MODE PORTABLE TRANSCEIVER

FT-817ND

HF/50/144/430 MHz
5 Watts Power Output (AM: 1.5 W Carrier)

YAESU
Choice of the World's top DX'ers

Vertex Standard
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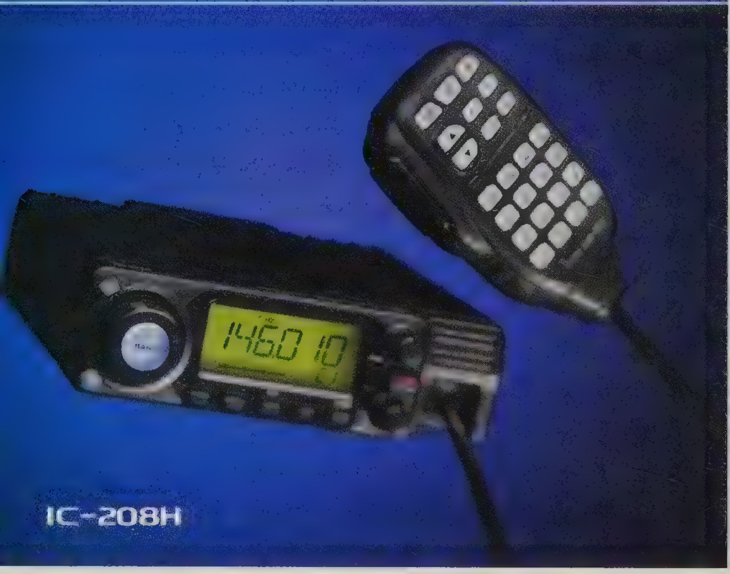
IC-706MKIIG



Icom fun on the go!

Up in the air over what to take with you when you're on the go? With our large selection of mobile and handheld radios, Icom makes sure you won't miss out on any of the fun!

IC-706MKIIG *HF performance, mobile size!*
• 160-10M/6M/2M/70CM*1 • HF/6M @ 100W, 2M @ 50W, 70CM @ 20W • 107 Alphanumeric Memories • CTCSS Encode/Decode w/Tone Scan • DSP • Auto Repeater • Backlit Function Keys • Built-in Keyer • IF-Shift • And More!

IC-208H *Dual band with attitude!*
• 2M/70CM • 55W VHF/50W UHF • 500 Alphanumeric Memories • CTCSS/DTCS Encode/Decode w/ Tone Scan • Wide Band RX* 118 - 999.99 MHz • Remote Control Mic • DMS • DTMF Encode • And More!

IC-2100H *Commercial grade rugged!*
• 2M • 50W Output • 113 Memory Channels • CTCSS Encode/Decode w/ Tone Scan • Remote Control Mic • Commercial Grade • Rugged Construction • Auto Repeater • Green or Amber Display • PC Programmable** • And More

IC-T90A *Pocket sized tri-bander!*
• 6M/2M/70CM • 5W Output • Wide Band RX* *.495 - 999.99 MHz* • 500 Alphanumeric Memories • CTCSS & DTCS Encode/Decode w/Tone Scan • Backlit Function Keys • Weather Alert • PC Programmable** • And More!

Visit your favorite HRO location to see our full product line-up!

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IC-7800

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7.007.800
SPECTRUM SCOPE
MARKER
HOLD
CENT/FIX
MAIN/SUB
SET
VOICE MEMORY
REC
PLAY
LOCK
COMP
DRIVE
VOX GAIN
ANTI VOX
CONTRAST
DIGI-SEL
NOTCH
CLEAR

N7OS/N7IH
1ST PLACE
4A
FIELD DAY 2004

Seeking the ultimate rig? You've found it! Icom's IC-7800 is the most advanced ham radio ever built. Period.

BIG GUN

'7800 Specifications: • **TX**: HF + 6M TX • 200W Built-in, Continually Adjustable Down to 5W • 100% Duty Cycle • Digital Voice Recorder • Double Key Jacks, Front & Rear • **RX**: 30 kHz to 60 MHz • Twin Independent Superior Double Conversion Receivers, Each +40 dBm Third-Order Intercept (TOI) • Four 32-Bit IF-DSP Units with 24-bit A/D D/A Converters – 1 per RX, 1 for TX, & 1 for the Band Scope • 7" TFT Color LCD • 110 dB Dynamic Range • Optimized 50 MHz Preamp/Mixer • Dual Digital Twin Bandpass Tuning • And Much More

This is the rig you wanted as a kid: Top-of-the-line everything, the most advanced ham radio ever built. We've called it the ultimate. We've called it a masterpiece. You and your friends will call it amazing! QST even called it "stunning", and said: "We must confess that if there's much more improvement in [receiver dynamic range] it will become hard to verify with our current Lab equipment." (August 2004). Now that you're no longer a kid and the best is at hand, what are you waiting for? Visit your favorite HRO location today!

FREE | Purchase a new IC-7800 and, as a special thank you, receive an Icom Racing Jacket, while supplies last.

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RECEIVERS
3304.999
1299.9950
SIG NAVI
IC-R10
1309.995

IC-R20

Dual watch & audio record!

150 kHz – 3.3 GHz* • AM, FM, WFM, USB, LSB, CW • 1250 Alphanumeric Memories • CTCSS/DTCS Decode • Dual Watch • Audio Recorder • Weather Alert • Dynamic Memory Scan • Icom's Hot 100 Preprogrammed TV & Shortwave Channels • Lithium Ion Power

IC-R10

Advanced performance!

500 kHz – 1.3 GHz* • AM, FM, WFM, USB, LSB, CW • 1000 Alphanumeric Memories • Attenuator • Backlit Display & Key Pad • Voice Scan Control • 7 Different Scan Modes • Beginner Mode • Band Scope • AA Ni-Cds & Charger

IC-R3

See & hear all the action!

500 kHz – 2.45 GHz* • AM, FM, WFM, AM-TV, FM-TV • 450 Alphanumeric Memories • CTCSS with Tone Scan • 4 Level Attenuator • Antenna with BNC Connector • 2" Color TFT Display with Video and Audio Output Jacks • Lithium Ion Power

IC-R5

Compact performance!

150 kHz – 1.3 GHz* • AM, FM, WFM • 1250 Alphanumeric Memories • CTCSS/DTCS Decode • Weather Alert • Dynamic Memory Scan • Icom's Hot 100 Preprogrammed TV & Shortwave Channels • Weather Resistant • AA Ni-Cds & Charger

Tune in the world with Icom!

R75
99
TWIN PBT

IC-R75

Pull out the weak signals! ***DSP included, US models only!***

30 kHz - 60.0 MHz* • AM, FM, S-AM, USB, LSB, CW, RTTY • 101 Alphanumeric Memory Channels • Twin Passband Tuning (PBT) • Synchronous AM Detection (S-AM) • Optional DSP with Noise Reduction Auto Notch Filter • Triple Conversion • Up to Two Optional Filters • Front Mounted Speaker • Large Display • Well Spaced Keys and Dials • PC Remote Control with Optional Icom RSR75 Software for Windows® • And Many Other Features

PC programmable

All Icom receivers are PC programmable. Visit your favorite HRO location for details.

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Icom HTs - Fun to go!

IC-T90A

Ultra compact with
morse code synthesizer

- 6M/2M/70CM @ 5W
- Wide Band RX*
.495 - 999.99MHz
- 500 Alphanumeric Memories
- CTCSS & DTCS Encode/
Decode with Tone Scan
- Weather Alert

IC-V8

Reversible UP/DOWN buttons
and rotary selector

- 2M @ 5.5W
- Excellent Audio
- 100 Alphanumeric Memories
- CTCSS & DTCS Encode/
Decode with Tone Scan
- Auto Repeater Function
- Weather Alert

IC-T2H SPORT

Easy operation - uses AA alkalines
Customizable keys

- 2M @ 6W
- 40 Alphanumeric Memories
- Alkaline Case
- CTCSS Encode/Decode
with Tone Scan
- Auto Repeater Function
- Great Price

IC-W32A

Independent band controls with
VHF/UHF exchange function

- 2M/70CM @ 5W
- 200 Alphanumeric Memories
- V/V, U/U, V/U Operation
- True Simultaneous Receive
- DTMF Auto Dialer
with Memory
- Auto Repeater Function

IC-T7H

Powerful output and
superior receive audio

- 2M/70CM @ 6W
- RX 118-174 MHz
& 400-470MHz
- 70 Alphanumeric Memories
- CTCSS Encode/Decode
with Tone Scan
- Auto Repeater Function

IC-V82

Traditional 2M operation combined
with optional D-STAR format digital

- 2M @ 7W
- Optional D-STAR Format
Digital Unit for Voice and Data
Communication! Features Include
Callsign Calling, Up to 20 Characte
Text Message, Position Exchange**
- Also Available in a 70CM Version
As the IC-U82

PC programmable

All Icom handhelds are PC programmable. Ask HRO for details.

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GO DIGITAL

Thinking about getting into Digital? Icom leads the industry in bringing Digital technology to amateur radio. Go Digital! Go Icom! Now available at HRO.

NEW IC-V82

2M @ 7W • Optional D-STAR format digital unit for voice and data communication! Features include callsign calling, up to 20 character text message, position exchange* • CTCSS/DTCS encode/decode w/tone scan • desktop trickle charger • Also available in a 70CM version (IC-U82) • And much more!

NEW ID-800

2M/70CM @ 55W/50W • D-STAR format digital unit for voice and data communication! Features include callsign calling, up to 20 character text message, position exchange* • CTCSS/DTCS encode/decode w/tone scan • detachable control head • And much more!

IC-2200H

• 2M @ 65W • 207 alphanumeric memories • Optional D-STAR format digital unit for voice and data communication! Features include callsign calling, up to 20 character text message, position exchange* • CTCSS & DTCS encode/decode w/tone scan • weather alert • And much more!

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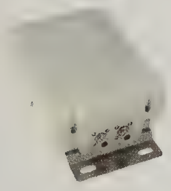
IC-910H

USB
RIT
145.890.0
LSB
435.110.0
POWER
TRANSMIT
PHONES
MENU
SET
ATT
V/M
A=B
A/B
TONE
SPLIT
FM
RIT SHIFT
DN
UP

Horizon to horizon. And beyond!

Nothing beats the 910H when it comes to satellite ops. A big-screen, dual-frequency readout sets the scene while velvet smooth Doppler compensation lets you follow the action. With .11µVsensitivity, optional DSP, and push-button normal/reverse tracking, there's never been a rig bred more specifically for LEO birds. But the sky is not the limit with the 910H. For terrestrial operation, it more than delivers everything you need. At home or in the field, its built-in all-mode extra punch eliminates the need for amplifiers. Whether you're working FM repeaters, 2 meter SSB from a mountaintop, or tracking the newest satellite, the 910H puts you in command. Visit your favorite HRO location today.

2M/70CM @ 100W/75W • All Mode • Simultaneously Works Two Bands at Once • 9600 bps High Speed PACKET Port • .11 µV Sensitivity • Main & Sub Band Functions for IF Shift, Sweep, NB, RF Attenuator • Large LCD Display • Four Versatile Scanning Functions • CTCSS Encode/Decode/Tone Scan • Built-in Keyer • PC Controllable • Memory Pad • Normal/Reverse Satellite Functions • And Much More!



AG-2400

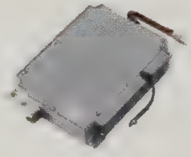
Downlink Receive Converter

Converts a 2400MHz RF signal to a 144MHz IF signal, allowing US mode operation. When used with optional UX-910, LS mode operation is also available.

UT-106

DSP Unit

Provides AF-DSP (Digital Signal Processing) functions, including noise reduction and automatic notch filter. Use two, one for main band & one for sub-band.



UX-910

1200MHz Band Unit

Turns the IC-910H into an all mode, tri-band transceiver (1.2GHz @ 10W). Also makes crossband and full duplex operation possible.

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value • valuing

WOW!

val•ue (văl´yōō) n from L valuta, worthy
1. a fair return in money or another medium of exchange for something. *"My Icom dual band mobile radio was well worth the money, a great value."*

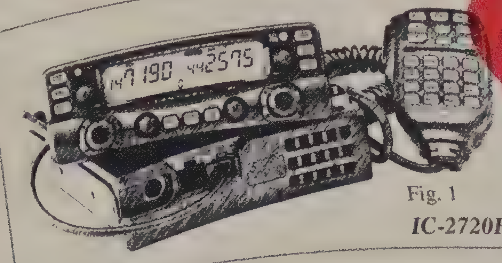

Fig. 1
IC-2720H

2. the exact monetary worth of something *"My Icom dual band amateur radio is a great value especially since the remote head cable comes standard; a savings of over $50.00"* **3.** the relative worth, importance, or usefulness of something to somebody. *"My Icom dual band radio is invalueable to our local emergency communications preparedness".* **<positive value for the money> <the value of unimpaired communications during an emergency>** **4. a.** a numerical quantity that is assigned or is determined by calculation or measurement **<the value of x>** *"If I have ten Icom dual band mobile radios, and I take away four, I am in extreme sorrow, and I am left with a value of six Icoms – which is still a hundred times better than any other radio, let me tell you!"* **b.** precise signification **<the word value of something>** *"My Icom dual band mobile radio is beyond measurable value when it comes to emergency preparedness."*

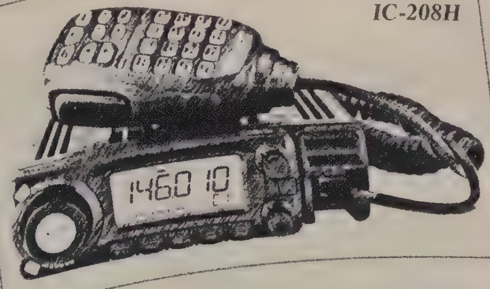

Fig. 2
IC-208H

5. a. the real or perceived duration of time a musical note is held. *"The clarity of sound my Icom dual band mobile gives is music to my ears."* **b.** the written representation of the quality of tone or a spoken sound. *"My Icom IC-208H has 2 Watts of audio output."* **6. a.** the lightness or darkness of a color: LUMINOSITY **b.** the relation of one part in a picture to another with respect to lightness and darkness *"The amber value of my Icom's LCD display is adjustable to the environmental needs, and is perfect to see day or night."* **7.** something (as a principle or quality) intrinsically valuable or desirable **<sought material values instead of human values>** *"I value my Icom IC-208H dual band mobile radio above any other due to the 50W UHF output."* value verb Inflected Form(s): **val·ued; val·u·ing; got to have one**

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ICOM®

ICOM IC-V8
ICOM IC-V8000
147.080
ICOM HM-133V

The perfect emergency communications solution

Looking for the perfect emergency communications solution? Keep watch with Icom's 'V8 handheld and 'V8000 mobile combo. These military-rugged 2 meter transceivers are your ready and able sentrys, there when you need them most. Loud, clear audio and simple, straight forward design. Swap out the standard Ni-Cd battery that comes with your 'V8 for an optional AA alkaline case, and you'll always have a ready-to-go communications solution stored nearby. And for power that packs a punch, nobody beats the 'V8000's 75W of output power - talk and be heard futher! For the home, the car, or wherever you are. Visit your favorite HRO store.

IC-V8, Rugged easy to use 2M HT • 5.5/0.5W Output Selectable • 107 Alphanumeric Memory Channels • CTCSS/DTCS Encode/Decode w/Tone Scan • DTMF Encode • Auto Repeater • Excellent Recovered Audio • 300mW Audio Output • Reverse Shift Function • Backlit LCD • Reversible Up/Down Switch & Rotary Selector • Drop-In Charger • PC Programmable with optional equipment

IC-V8000, Powerful 2M mobile • 75W Output • 207 Alphanumeric Memory Channels • CTCSS/DTCS Encode/Decode w/Tone Scan • DTMF Encode • Backlit Remote Control Mic • FM Wide/Narrow • Weather Alert Scan • Dynamic Memory Scan • 10dB Squelch Attenuator • Priority Watch • Versatile Cloning • Front Firing Speaker • Rugged Construction

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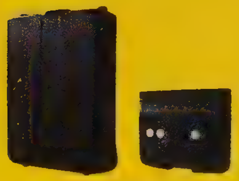
BROUGHT TO YOU BY
MAHA®

DISCHARGE
MH-C777PLUS-II
UNIVERSAL CHARGER & ANALYZER
RESET

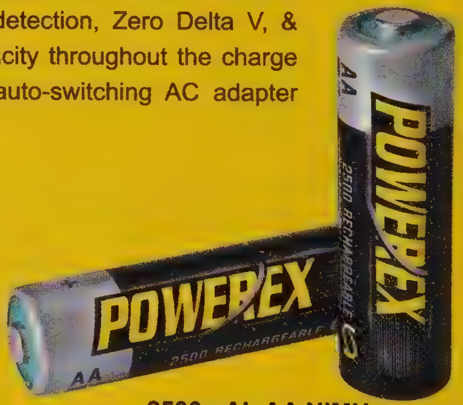
POWER MATTERS.

MH-C777Plus-II
Universal Charger & Analyzer

Charge/Analyze nearly any battery pack for ham radio, cellular, and more. One-Touch Reset button. Supports Li-Ion, Li-Poly, NiMH, and NiCD battery chemistries. Supports a wide voltage range of 1.2V to 14.4V (1 to 12 cells) for NiMH & NiCD, and 3.6V to 14.4 V (1 to 4 cells for Li-Ion). Charge 1 to 12 cells of AA, AAA rechargeable battery cells and alike. Intelligent microprocessor driven Negative Delta V detection, Zero Delta V, & Delta Temperature. Digitally display voltage, time, and capacity throughout the charge and discharge processes. Includes a light weight travel auto-switching AC adapter (100V to 240V AC), an "alligator clip lead cable" & car kit.


Battery Packs

MH-C204W



2500mAh AA NiMH

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Western US/Canada 1.800.854.6046 Mountain/Central 1.800.444.9476 Southeast 1.800.444.7927

RE_INVENTING RADIO

Through_Innovation

XM
READY
e1
BB King
Take It Home
etón

XM Satellite Radio service and antenna sold separately

E1

AM/FM/Shortwave/XM Ready Radio

XM Satellite Radio offers over a hundred channels of music, news, talk, and sports programming.

- High-Performance receiver for international and local radio listening
- 1700 user-defined station memory presets with customizable organization by country
- Graphical LCD screen displays frequency, song information (when available), battery/signal strength and clock/alarm functions
- Direct frequency entry for all bands
- Shortwave, AM and LW range of 100-29999 KHz
- SSB, Synchronous Detector and Passband Tuning

Dimensions: 13.1"L x 7.1"H x 2.3"W Weight: 4lbs. 3oz. Power Source: 4 D batteries (not included) or AC adaptor (included)

10470
GRUNDIG

S350

AM/FM Shortwave radio

High-performance field radio

- Aeronautical design with rugged body
- Excellent AM, FM, & Shortwave reception
- Line-level output, separate bass, treble
- External antenna input
- Wide/narrow bandwidth filter controls

Dimensions: 10.8"L x 8"H x 3.5"W Weight: 3lbs. 2oz. Power Source: 4 D batteries (not included) or AC adaptor (included)

G4000A

AM/FM Shortwave radio

High-performance portable

- Superior reception of AM, FM, Shortwave, and SSB
- Advanced dual conversion design
- Autoscan and direct keypad tuning
- 40 customizable station presets

Dimensions: 8"W x 4.8"H x 1.5"D Weight: 1lbs. 5oz. Power Source: 6 AA batteries (not included) or AC adaptor (included)

YB550PE

AM/FM Shortwave radio

Digital marvel

- Shortwave range of 1711 – 29,995 Khz
- Autoscan, direct keypad, scroll wheel tuning
- 200 customizable station presets
- Alarm and sleep timer functions
- AC adaptor & supplementary antenna inputs

Dimensions: 3.5"L x 5.8"H x 1.4"W Weight: 11oz. Power Source: 3 AA batteries (included)

HAM RADIO OUTLET

Ham Radio Outlet Stores:

Phoenix, AZ 1-800-444-9476
Anaheim, CA 1-800-854-6046
Burbank, CA 1-800-854-6046
Oakland, CA 1-800-854-6046
San Diego, CA 1-800-854-6046
Sunnyvale, CA 1-800-854-6046

Denver, CO 1-800-444-9476
New Castle, DE 1-800-644-4476
Atlanta, GA 1-800-444-7927
Salem, NH 1-800-444-0047
Portland, OR 1-800-854-6046
Woodbridge, VA 1-800-444-4799

etón®
www.etoncorp.com
Palo Alto, California

KENWOOD
Listen to the Future

GET READY FOR KENWOOD'S SKYCOMMAND SYSTEM II+*

Work DX while walking around the neighborhood, driving to the local convenience store or relaxing by the pool. *Imagine the possibilities?*

TS-2000
KSS II+

TH-D7A(G)
KSS II+

TM-D700A
KSS II+

You can remote control your TS-2000 series transceiver with any of the above Kenwood Radios.

Download the TS-2000, TH-D7AG and TM-D700A Operators Manual from *www.kenwood.net* and learn more about it.

---

* Pending FCC rule change.

KENWOOD U.S.A. CORPORATION
Communications Sector Headquarters
3975 Johns Creek Court, Suite 300, Suwanee, GA 30024-1265
Customer Support/Distribution
P.O. Box 22745, 2201 East Dominguez St., Long Beach, CA 90801-5745
Customer Support: (310) 639-4200 Fax: (310) 537-8235

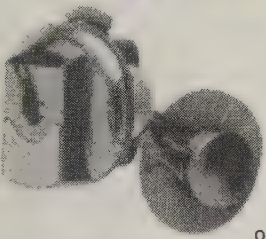
INTERNET
Kenwood News & Products
http://www.kenwood.net
ADS#08105

JQA-1205 091-A
ISO9001 Registered
Communications Equipment Division
Kenwood Corporation
ISO9001 certification

EQUIPMENT MOUNTS

Lido

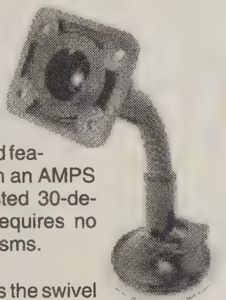
UltiMount



The UltiMount installs in seconds and can be swiveled, rotated and adjusted to virtually any position. Secured with a flexible pad that has 3M automotive adhesive on the back, the UltiMount can be removed without leaving any residue.

Included with the UltiMount: a belt clip, a Nokia style button, two adhesive backed buttons, and a specially formulated surface prep kit used to remove dirt and silicon emulsions from your dash to ensure maximum adhesion. **HRO Price $24.95**

WindowMate Mount



The WindowMate is a premium suction mount for windshield or glass applications and features an integrated swivel with an AMPS hole pattern. It can be adjusted 30-degrees in any direction and requires no locking or tightening mechanisms.

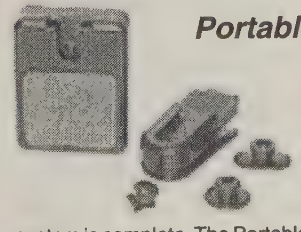
A six-inch flexible arm attaches the swivel to a strong suction cup base that holds tight by simply pushing down the locking lever. Includes mounting hardware. **HRO Price $14.95.**

WindowMate Express Mount

The WindowMate Express is a version of the original WindowMate and features an Express Mount attached to the integrated swivel. This mount is perfect for any electronic device using a button, leather case or OEM clip.

Turn the mounting platform upside down to reveal a slot big enough to accommodate a belt clip. Includes a belt clip, two buttons and mounting hardware. **HRO Price $19.95.**

Portable Solution



Secure a button to the back of your electronic device with reliable 3M adhesive. Attach the Portable Solution to your vehicle's dash and the system is complete. The Portable Solution even works on phones in leather cases or with built-in clips.

Included with the Portable Solution is a belt clip, a Nokia style button and two adhesive backed buttons. Also included is a specially formulated surface prep kit used to remove dirt and silicon emulsions from your dash to ensure maximum adhesion. **HRO Price $12.95**

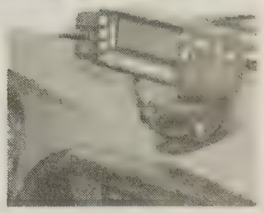
LoBoy Mount

A universal, low profile mount for securing hands free cradles, XM and Sirius satellite radios, TFT displays and more. The LoBoy features an integrated swivel which allows easy adjustment in any direction, holding securely without locking or tightening levers. The flexible mounting pad with its 3M adhesive back makes installations fast, simple and strong.

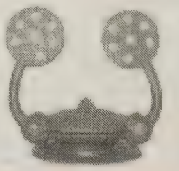
Just added to the LoBoy Mount at no additional cost is an L-Bracket. This bracket can be used to mount a device on a horizontal surface like the top of a dash panel or to hold devices in a vertical manner, for example, on the side of a dash console. **HRO Price $19.95.**

The BUG Mount

shown with optional radio



The BUG is a mount for securing small, narrow profile radio control heads for Satellite radios, (both XM and Sirius); VHF radios, HAM radios and more.

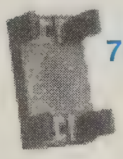


The BUG features a pivoting action for the two arms which rotate on a solid shaft. This allows for simple alignment of the arms to match varying hole patterns for mounting different control heads. Double face adhesive pads are included for each arm to secure items without mounting holes. **HRO Price $19.95**

GPS / Radio / Phone Mounts

Portagrip

Portagrip's collection of holders for cellular phones, GPS units and radios that will make your mobile operations easier and safer. Standard foot size: 2.5 x 2.5 inches. For tight quarters, use the small foot: 2 x 1.625 inches.



701

702

Portagrip Holders: Holds most phones from 1.6" to 2.6" wide. Includes models *701*, *706* Portagrip / Slim-line with set screw adjustment, *707* Porta-grip / Slimline with knob adjustment.

Portagrip 2000: Holders adjustable both in width and length. Includes models *702* for narrow phones, *703* for phones up to 2.25' and *704* for flip-style phones.

782

797

Stay-put Flex Mount: Includes model *782*.

Uniflex Mount: Includes model *797* with knob adjustment under mounting plate.

322

716

Standard Mounts: Split ball base with 90 degree tilt movement. Includes models *320* std mount w/6" rise, *322* deluxe mount w/6" rise, *328* mount base only accommodates 5/8" diameter post tilts 0 to 90 degrees, *329* base only accommodates 5/8" diameter post and tilts to 45 degrees over center.

Slimline 2000 Pedestal Mounts: Pivot 210 degrees and rotate 360 degrees, 6" or 9" heights. Includes model *716* w/set screw adjustment at head and foot, *717* knob adjustment at head and foot.

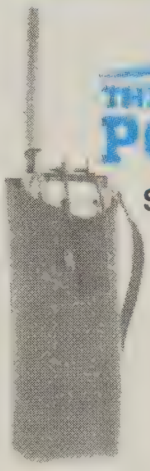
726

Mini Mount: Perfect for tight installations, height only 4". Includes models *726-04* set screw adjustment at head and *727-04* knob adjustment at head.

RADIO CASES

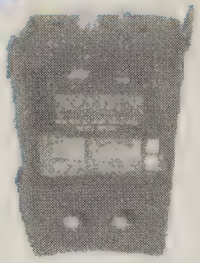
Radio Protectors

THE POUCH



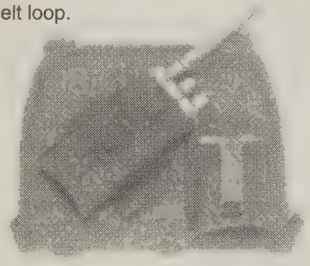
Secure Shock Absorber

New design water resistant carrying cases are made of bouncy, tough neoprene and nylon. A bun-gee type parachute cord restraining strap secures the HT. Has a durable quick-release clasp on a web belt loop.



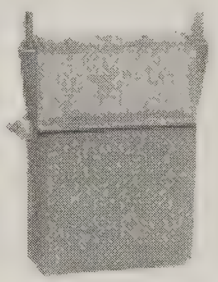
Analyzer POUCH

Neoprene & nylon plus water-resistant padding protect your analyzer. Clear window over read-outs. Back-pocket for accessories. Includes adjustable shoulder strap. Specify any model. **HRO Price $24.95**



Chest POUCH

"Hands-free" security. Double-ply cordura "bib" with adjustable harness. Pouches for radio & spare battery. Pen holders and big pocket on back for accessories. Specify ANY radio or pouch. **HRO Price $25.95**



Packer POUCH 817

The Packer Pouch 817 was especially designed for the Yaesu 817. **HRO Price $24.95**

Make	Radio Model	Pouch Model	HRO Price
ADI	AT-201	T2A	$17.95
Alinco	DJ-G5T	32-5T	$14.95
	DJ-V5DC/V5TH	A5T	$14.95
	DJ-280TH/480T	A3T	$14.95
	DJ-196/496/596	P-5	$14.95
Icom	IC-Q7	S508-Q7	$12.95
	IC-T2H	T2A	$14.95
	IC-T7A/T22A	P-5	$14.95
	IC-T8A/81A	S510-T8	$14.95
	IC-T90A	90Z	$14.95
	IC-V8	A3T	$14.95
	IC-W32A	32-5T	$14.95
Kenwood	TH-D7A	DTX	$17.95
	TH-F6A	K6	$12.95
	G71A	G71	$14.95
	TH-79A 5.0 w	S2	$17.95
	TH-79A 2.7 w	S1	$17.95
	VC-H1	S2	$17.95
Yaesu	FT-50RD	10R	$14.95
	VX-1R	1R	$12.95
	VX-5R/VR-120	5R	$14.95
	VX7R	7RX	$14.95
	VX-150	S510-T8	$14.95

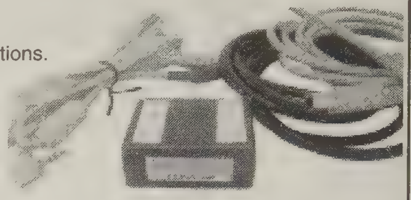
CONNECTORS

SARATOGA
AMATEUR RADIO PRODUCTS

Easy Connectors

EZ-PSK — **HRO Price $45.95**

Saratoga's connectors offer true plug and operate installation. No hassle setting jumpers. Simply plug in the EZ-PSK between your rig and PC sound card to start operating with your favorite PSK-31 or other digital mode software.



- Audio isolated in both directions.
- No external power.
- One-year warranty.
- Made in U.S.A.
- Weighs less than 7 ounces.
- Includes HamScope & Digipan.
- Works with all digital mode software.

Interface Model	For Rigs
EZ-PSK-703/3	IC-706 / IC-703
EZ-PSK-817	FT-817 / FT-857 / FT-897
EX-PSK-I8PIN	Icom 8-pin round connectors
EX-PSK-K8PIN	Kenwood 8-pin round connect
EX-PSK-KM	Kenwood modular connectors
EX-PSK-Y8PIN	Yaesu 8-pin round connectors

Power Panels

Power Panels provide convenient, safe, and reliable power distribution for all the radios and accessories in your shack or mobile installation. Easily move rigs between operating positions without worrying about the power cords.

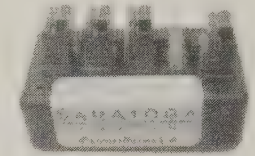
- Anderson PowerPole connectors.
- ARES / RACES standard connection.
- Mini ATC automotive fuses.
- Surge suppression & reverse polarity protection.
- One-year warranty.
- Made in the U.S.A.

PowerPanel 14

HRO Price $79.95

PowerPanel 14
- 14 Port DC power distribution panel.
- 30 Amp rating.

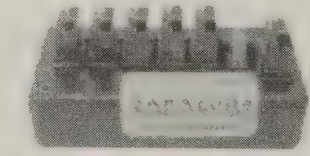
PowerPanel 4



PowerPanel 4

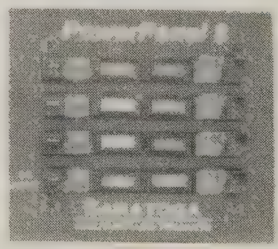
HRO Price $24.95

- 4 port DC power distribution panel.
- 1 input & 3 outputs.
- 25 Amp rating.



PowerPanel 6

HRO Price $34.95

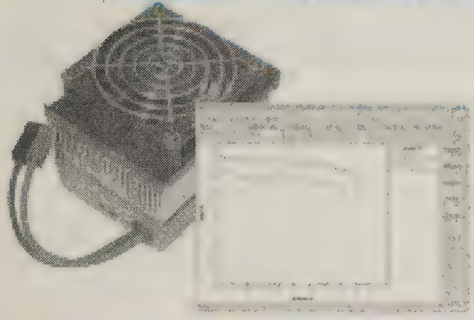


PowerPanel 8

HRO Price $59.95

PowerPanel 8
- 8 port DC power distribution panel.
- 30 Amp rating.

West Mountain Radio

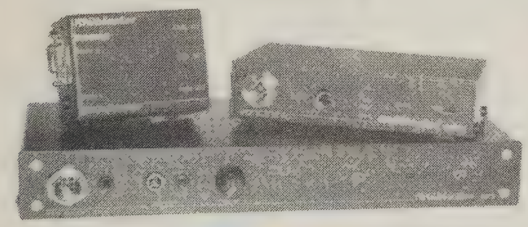


Computerized Battery Analyzer

HRO Price $99.95

CBA II: Test any battery type, size, chemistry, up to 48 volts. Plots constant current discharge voltage vs. ampere-hour to show battery capacity. Extremely accurate. Safely tests a few mA to 40 A, limited to 120 watts. Microprocessor controlled tester plugs into a PC's USB port. User friendly software, easy to install, set up and run. Save and print graphs. Print date and performance labels for your batteries. Ideal for anyone relying on rechargeable battery power. 6' USB cable, CD, PowerPole connectors.

Temperature Probe: Measures battery temperature during high current CBA test. Magnetic. Turns off test if over temperature. **HRO Price $10.95**



RIGblasters

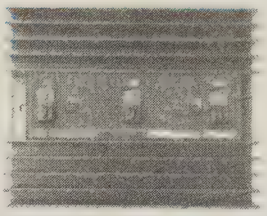
A RIGblaster is the easiest way to connect your radio to your computer to operate PSK31, SSTV, RTTY, Echolink, AMTOR, Packet, APRS, CW, DVK, WSJT, logging and more. RIGblasters connect to a radio's microphone input, computer's sound card output, and serial port. Ground isolated, rf filtered. Supplied with all cables, AC-power cubes, CD ROM (over 100 programs), instructions. All work with 8-pin and RF-45 microphones. 4-Pin and RJ-11 style microphone conversion kits are available.

RB / PR / C – RIGblaster PRO: All sound card modes, microphone equalization, records QSO's. Rig control, direct CW and FSK. Automatic microphone switching. **HRO Price $249.95**

RB / PL / C – RIGblaster Plus: All sound card modes, direct CW, FSK, automatic microphone switching. **HRO Price $139.95**

RB / NO / CU – RIGblaster Nomic: All sound card modes. No microphone switching. No power needed. For Ecolink, portable or temporary setups. **HRO Price $69.95**

Yaesu MOD6 CBL: 6 pin microphone conversion cable. **HRO Price $13.95**
4T8Kit: 4-pin microphone conversion cable kit. **HRO Price $19.95**

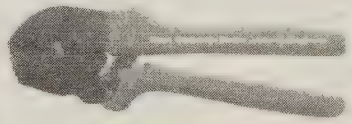


PWRgates

PWRgates provide a backup power system for the ham shack, repeater or emergency communications centers. Equipment is instantly switched between 13.8V DC supply and battery during a power failure. Keeps battery charged. Handles up to 40A.

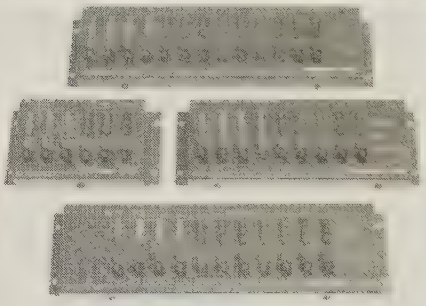
SPG-4 – SuperPWRgate: with built-in four stage battery charger. Selectable 1, 4, 6 and 10A rate. **HRO Price $119.95.**

PG-40 – Powergate: contains a simple float charger. **HRO Price $69.95**



PWRcrimp

The **PWRcrimp** tool is a high performance tool for crimping 15, 30 and 45 A Anderson Powerpole contacts. Ratcheted with contact positioner. Better than soldering. **HRO Price $49.95**



RIGrunners

RIGrunners power panels are the most convenient and safe way to connect all your 12 volt equipment. Uses Anderson Powerpoles, the ARES, RACES, RSGB standard, polarized and color keyed. All models rated at 40 amps. Each outlet is fused with assorted ATC/ATO automotive fuses. Blown fuse LED indicators. Includes a 6' cable.

RR / 4010S / C: 10 outlets. One "always on" and nine auto or manually switched outlets. FET on/off system controls switched outlet turning on the entire station with the power button on your rig. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price $119.95**

RR / 4012 / C: 12 outlets. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price $112.95**

RR / 4008 / C: 8 outlets. Quick status precision LED, high, normal and low voltage monitor and warning buzzer. 12 pair Powerpole sets. **HRO Price $92.95**

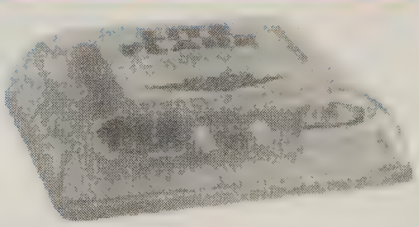
RR / 400 / C: 5 outlets. 6 pair Powerpole sets. **HRO Price $59.95**

Emergency Light

LiteFlare

MODEL LF-01

HRO Price $14.99



Lite Flare is an economical, low priced alternative to the road flare. Unlike single-use disposable incendiary flares, each Lite Flare provides more than 400 hours of operating efficiency – and they're reusable. Just insert two fresh "AA" batteries. Lite Flare's flashing red light is visible for over two miles during darkness!

The Lite Flare operating mechanism is enclosed inside a rugged military-grade, high impact plastic case that resists water, snow, dust, rough pavement – even the weight of an automobile.

Lite Flare is safe to use and won't ignite fuel or clothing. Just one Lite Flare replaces more than 750 (30 minute) incendiary flares. Lite Flares produce no toxic residue or fumes to harm the environment or the user.

The Lite Flare is designed for night time use but can also be used during foggy or heavy overcast daytime conditions. In addition, the Lite Flare is ideal to use during stormy weather conditions. Anyone can operate the Lite Flare, just flip the switch and the Lite Flare begins flashing.

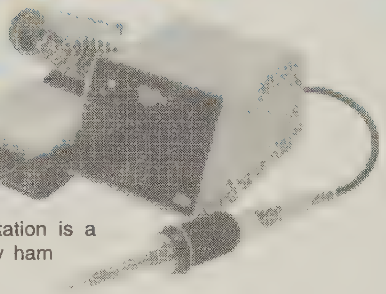
Soldering Equipment

Weller®

WTCPT

Soldering Station

HRO Price
$119.95



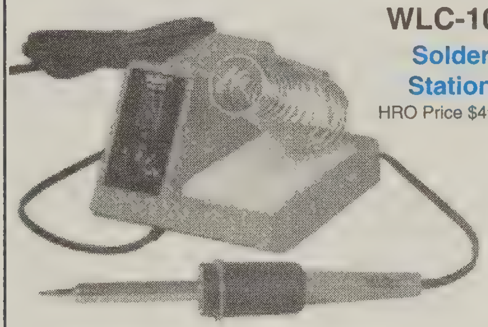
A soldering station is a must for every ham shack.

- Special "closed loop" method of controlling maximum tip temperature.
- Transformer powered with macro style, low voltage, temperature controlled soldering iron.
- Power unit housing features impact resistant plastic.
- Quick disconnect plug for iron and lighted on / off switch.
- Separate conductor grounds iron tip and terminates at third pin of power cord.
- Uses PT series tips and operates at 600°F, 700°F and 800°F.

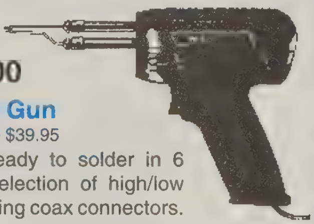
WLC-100

Solder Station

HRO Price $49.95



40 watt solder station, 110 volts. Adjustable 5-40 watts with safety guard solder iron. Includes holders, sponge and tip.

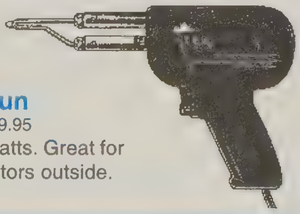


8200

Solder Gun

HRO Price $39.95

100/140W, 110 V. Ready to solder in 6 seconds. Finger tip selection of high/low power. Great for soldering coax connectors.



D650

Solder Gun

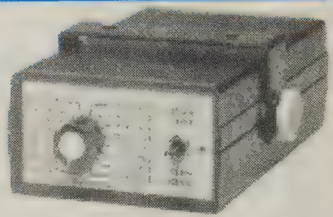
HRO Price $59.95

Solder gun, 200/300 watts. Great for soldering coax connectors outside.

Call Toll Free for Quotes

Encoders / Decoders

COMMUNICATIONS SPECIALISTS, INC.



CTCSS Encoder

TE-32: HRO Price $49.95

Tone encoders and decoders are just what you need to control your repeater or listen only to signals that are meant just for you. TE-32 multi-tone CTCSS encoder is powered by a 6 to 28 vdc unregulated source, has a three position range switch, a frequency accuracy ±0.1 Hz maximum over the temperature operating range. The TE-32 is low impedance (1K), low distortion, with adjustable sine wave output, 5 V peak to peak.

	Encode	Decode	Comments	HRO Price
TS-64DS	*	*	Universal design, CTCSS encoder / decoder capability for all FM transceivers	$57.95
SS-64	*		DIP switch programmable CTCSS encoder for all FM transceivers	$28.95
TE-32	*		Multi-purpose CTCSS / Burst Tone encoder	$49.95

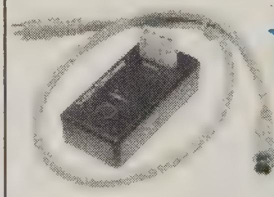
Accessories

Better RF

706 Tune Control

For Icom IC-706 or 706 MkII

Tune control consists of a small OPC board that plugs into the Molex connector on the back of your radio and makes the "Tuner/Call" button operational. Push once and the transceiver emits 10 watts, steady carrier and sidetone through the speaker (internal or external). Use the signal to tune your antenna, an antenna tuner, or to check your SWR. Press twice more and the transceiver reverts to the previous mode and power. Works 160 through 10 meters. **Suggested List $32.95**



NEW!

Yaesu Tune Control

For Yaesu FT-100, FT-857 or FT-897

Make the TUNE button function on your radio provide a low power output for tuning, adjusting antennas, checking SWR, no matter what mode you are using. Interface cable included. Provides an interface between your Yaesu transceiver and Icom type accessories. **Suggested List $44.95**

I-Mate

For Icom IC-756-Pro II or IC-746-Pro

The I-Mate allows the external selection of pre-recorded voice and keyed messages for the IC-756PROII and keyed messages for the IC-746PRO. It eliminates the necessity to shift the display from an operating mode to a memory select mode simply to transmit the pre-recorded messages.

Pressing one of four buttons on the I-Mate transmits the message associated with that button. In addition, the I-Mate provides a pulsed sine-wave oscillator for the tuning of high powered amplifiers and antenna tuners. An alternate audio input is provided for a microphones such as one of the Heil Pro-set series.

The I-Mate plugs directly into a transceiver's microphone jack and receives its power from the transceiver. Use the auxiliary input for digital modes. A switch is provided to alternate between the standard 8 pin microphone connector and the auxiliary input. **Suggested List $74.95**

Timewave Technology Inc.

Antenna Noise Canceller

ANC-4

The ANC-4 rf device eliminates or reduces power line noise, computer noise, TV generated interference, and other types of electrical noise. Attach the unit directly to the antenna connector of the receiver or transceiver to cancel locally generated noise before it affects the receiver AGC circuits. Reception of signals well below the noise level of the local interference is possible.

To cancel locally generated interference, the ANC-4 detects the interfering signal and adjusts its phase and magnitude so that it matches the offending interference at the receiver input, but is 180 degrees out of phase, effectively cancelling the interference. Front panel controls allow adjustment of both phase and magnitude, providing extremely deep cancellation.

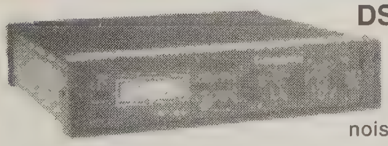
Connect the ANC-4 between the main station antenna and the receiver antenna connector. A second antenna connects to the ANC-4 to pickup noise. A short wire antenna or a short collapsible whip is generally satisfactory for eliminating noises generated around the operating position or in the house, but an external antenna usually works better to eliminate noises generated outside the home. Any noise antenna that works, including combinations of horizontal and vertically polarized antennas, is satisfactory.

The ANC-4 operates as an active antenna by using the noise antenna and the NOISE GAIN control to amplify the antenna output. The unit can also be used as a diversity combiner to peak weak signals or null interfering signals. **HRO Price 189.95**

Digital Processor

All Mode Noise Filter & RTTY Modem

DSP-599zx



This powerful noise and QRM filter surpasses the newest "DSP" radios with its flexible features. Continuous filter tuning up to 5 kHz opens up wider bandwidth modes like shortwave, AM broadcast, and VHF/UHF FM. Heterodynes disappear, weak signals pop up from the noise, and the sharp filters slice away QRM. The DSP RTTY modem (w/optional DSP-RTTY software) pulls out solid copy when you can barely hear a signal. An AM line noise filter dramatically reduces noise. Filter settings are easy-to-read on the backlit alphanumeric LCD display. Pushbuttons select noise reduction, memories, voice, CW, and data modes. Optical encoders tune the filters.

- Hyperspeed DSP - 27 ns, 36.8 MIPS.
- 2 selectable channels with multiple memories.
- Front panel programmable input sensitivity and line output level.
- Calibrated audio voltmeter & generator.
- AC line noise AM filter.
- 13 preset data filters + 2 user presets.

HRO Price $399.95
AC-5 P.S. $24.95

Telephone Filters

Stop telephone RFI from transmitters in the 0.5 to 30 MHz range. These filters are assembled and come with instructions. Special order either model to cover 500 kHz to 3.0 MHz. Call for prices and information.

Model RF-1 Single Line Filter for phones, answering machine, modems, faxes, & cordless phones. RJ-11 modular connectors. Special ordered for two-line phones. **HRO Price $16.95**

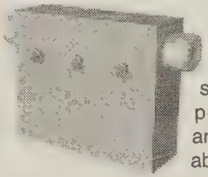
Model RF-2 For inserting RFI filtering into telephone wiring: inside phone jacks, behind wall-mounted phones, etc. Solder-less connectors. **HRO Price $10.95**

Intermod Filter

Par Electronics

2 Meter Filter

VHFTN152-158

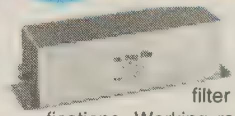


Pagers, because of their frequency assignments, power levels and high probability of being on the air, are the cause of over 99% of 2m and 70cm intermod. This notch filter greatly reduces these signals in both of the VHF pager bands, eliminating the intermod while allowing unimpeded reception of the remainder of the VHF band. This means you can still monitor public safety, NOAA weather, etc. In addition, these filters can be used on dual (2m/70cm) or triple (6m/2m/70cm) band transceivers. Their compact size makes them ideal for either fixed or mobile application. The filter is passive, requiring no power or switching. Insertion loss is so low as to be completely undetectable, even on the weakest signals. Notch bands 152-153 MHz. 157-159 MHz. Power handling 50W nominal. Silver/Gold/Teflon SO-239. VSWR @6m, 2m, 70cm 1.2:1 worst case. **HRO Price $89.95**

High / Low Pass Filters

Made in USA

YA-1

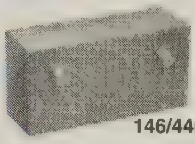


Bencher's low-pass filter has exceptional specifications. Working range: 1.8-29 MHz. Impedance: 50 ohms. Power rating: 1.5 KW continuous, 5 KW peak. Attenuation: at least 80 dB at 54 MHz. **HRO Price $79.95**

Bandpass Filters

DIGITAL COMMUNICATIONS INC.

NEW! Dual Band Filter



DCI-146/440-DB

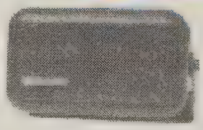
Eliminate intermod with these band-pass filters for 144, 220, or 440 MHz or with the 2m / 440 MHz dual band filter. Connect a filter between your VHF / UHF, base or mobile rig and antenna. Enjoy your favorite station without listening to the squawks and squeals of intermod. These filters reduce the strength of interfering signals while allowing the signals you want to hear to pass through at virtually full strength.

The filters are made to first-class specifications with silver-teflon connectors and extruded aluminum, copper and brass. In addition to the standard 4-pole filters, 7-pole and larger ultra-sharp filters are available. The DCI-146-4H intermod filter for 2 meters is 12" X 3"X 5" and has UHF connectors.

Model	Band	HRO Price
DCI-146-4H	2m	$119.95
DCI-223.5-3H	220 MHz	119.95
DCI-445-10C	440 MHz	139.95
DCI-146/440-DB	2m/440 MHz	189.95

Noise Reduction

SGC



SG-7014 Speaker

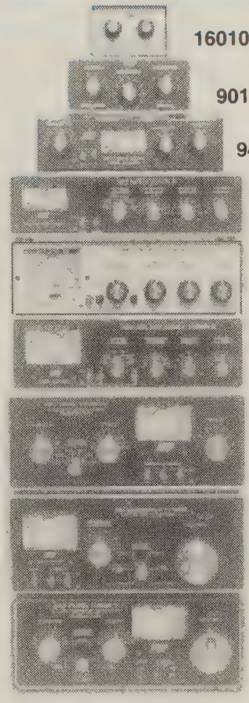
HRO Price $119.95

The affordable ADSP2 speaker delivers top of the line noise reduction for ANY transceiver. It provides 2 levels of noise reduction with one-click operation. Switch equipment and locations easily with this stand alone ADSP2 unit.

13dB and 26dB selectable noise reduction. 110 – 500mA Consumption

MFJ

HF Tuners



MFJ-16010 Random Wire Tuner for all bands anywhere. 1.8-30 MHz. Turn any random wire into a transmitting antenna. Also for apartment, motel, camping. 200 watts. *HRO Price $49.95*

MFJ-901B Versa Tuner, our smallest, most affordable 200 watt tuner is good for matching solid state rigs to linears within limited space and budget. 1.8-30 MHz, 4:1 balun. *HRO Price $69.95*

MFJ-903 Tuner/ Wattmeter for 6M 50-54MHz. *HRO Price $49.95*

MFJ-945E Mobile Tuner This mobile tuner extends antenna bandwidth and eliminates the need to stop, go outside to readjust your mobile whip. Cross-needle meter handles 300 watts. It reads forward / reflected power in 50 / 300 and 5 / 50 watt ranges. Has on / off lamp switch. *HRO Price $99.95*

MFJ-941E Versa Tuner II 300-watt tuner for 1.8-30 MHz. It has a lighted cross-needle meter and on/off switch. *HRO Price $109.95*

MFJ-948 like the 949E but without dummy load. Eggshell white. *HRO Price $119.95*

MFJ-949E Deluxe Versa Tuner II covers 1.8-30 MHz and handles 300 watts. Has built-in 50 ohm dummy load. Lighted peak reading cross-needle SWR / wattmeter reads forward / reflected power in 50 / 300 and 5 / 30 watt ranges. Front panel antenna switch selects 2 coax lines directly or through tuner, random wire / balanced line or dummy load. Efficient 12-position airwound inductor gives lower losses and more power out. Has 4:1 balun, 1000 volt capacitors. A black aluminum front panel matches your rig perfectly. *HRO Price $129.95*

MFJ-962D Versa Tuner III for 1.8-30 MHz handles 1.5 kW PEP. Matches coax, random wire, or balanced line (built-in 4:1 balun). Six position antenna switch for 2 coax lines. *HRO Price $249.95*

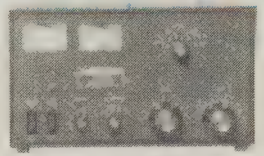
MFJ-969 300 Watt Roller Inductor Tuner with AirCore™ roller inductor. Covers 6m throught 160m. Has lighted cross-needle meter, 8 position antenna switch, built-in dummy load, 4:1 balun. Tunes any antenna. *HRO Price $189.95*

MFJ-986 Differential-T Tuner™ for 1.8-30 MHz, at 3 kW PEP. T-network with AirCore™ roller inductor and differential capacitor. Peak reading cross-needle SWR / wattmeter for 200 / 50 and 2000 / 500 watt ranges. Roller inductor spinner knob, 3 digit counter. 6 position antenna switch. 4:1 balun. *HRO Price $299.95*

MFJ-989D Versa Tuner V heavy duty! Covers 1.8-30 MHz, 3 kW PEP, matches everything: coax fed, random wires and balanced lines. AirCore™Roller inductor with spinner knob and 3-digit counter. Peak reading cross-needle SWR / wattmeter 200 / 2000 watt ranges. 50 ohm, 300 watt dummy load, 4:1 balun, 6 position antenna switch, tilt flip stand. *HRO Price $319.95*

HF Amps

AMERITRON

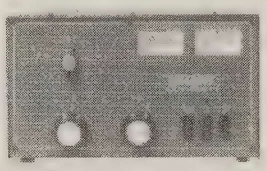


AL-80B

$1249.95

HRO Discount Price

Ameritron's AL-80B gets a kW PEP output from a compact desktop linear that plugs into a 120 VAC outlet. You get 850 watts output on CW and 500 watts on RTTY. It covers all bands 160-15 meters including WARC and MARS. It is user modifiable for 10/12 meters with the proper license. The amp has an extra heavy duty power supply, Eimac® 3-500Z tube, nearly 70% efficiency, tuned input, Pi/Pi-L output, inrush current protection, multi-voltage transformer, dual cross-needle meters, QSK compatibility, two-year warranty. Made in the USA.

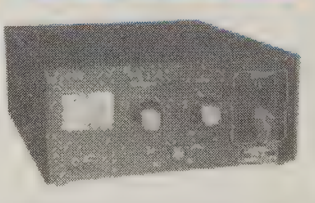


AL-811	**AL-811H**
3-tube model	4 tube model
600-watt output	800-watt output
$629.95	**$749.95**

HRO Discount Prices

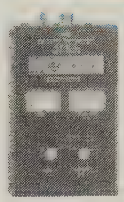
These low-cost HF amps give you plenty of power to burst thru QRM. Either compact desktop linears will slip right into your ham shack, plugging into a 120 VAC outlet. You get three (or four) tough 811A transmitting tubes plus an extra heavy duty power supply, all HF band coverage, pressurized ventilation, tuned input, dual illuminated meters, adjustable ALC, operate / stand-by switch, transmit LED, UPS shippable.

HF Tuner

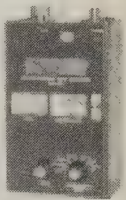


High Power Antenna Tuner ATR-30 Handles 1500 watts carrier. Super high current edge-wound silver plated roller inductor. 500 pF tuning capacitors with 6:1 vernier reduction drives. 3 core choke balun, six position antenna switch. True active Peak Reading Meter. *HRO Price $579.95*

SWR Analyzers



MFJ-259B SWR Analyzer™ with RF Impedance Meter reads antenna SWR, complex RF impedance: Resistance (R) and Reactance (X) or Magnitude (Z) and Phase degrees, coax cable loss in dB, coax cable length and distance to fault, return loss, reflection coefficient, inductance and capacitance. Tells battery voltage. Has huge LCD digital readout with built-in frequency counter. Side-by-side SWR and RF impedance meters, Ni-Cd internal battery charger, battery saver feature, low battery warning and easy access batteries. Has smooth reduction drive tuning. Truly portable. Uses 10 AA or Ni-Cd batteries (not included) or 100 VAC with MFJ-1315 ($14.95). *HRO Price $219.95*



MFJ-269 covers 1.8 to 170 MHz and 415 to 470 MHz It has all the features of the MFJ-259B, the world's most popular analyzer, plus much more! Large easy-to-read two line LCD display and side-by-side meters clearly show your information. Built-in Ni-Cad/Ni-MH charger circuit, battery saver, low battery warning, smooth reduction drive tuning. Use as signal source for testing/alignment. Built-in CoaxCalculator™ calculates coax line length in feet given coax length in electrical degrees and vice versa for any frequency and any velocity factor (great for building matching sections and phasing lines). New 12-bit A/D converter gives much better accuracy and resolution than common 8-bit A/D converters. Super easy to use! Just set the bandswitch and tune the dial. *HRO Price $319.95*

Antenna Switches

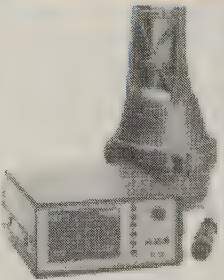
MFJ-1702C Coax Antenna Switch. 2 positions plus center ground, 50 ohm. Rated to 500 MHz with 02 dB loss. Handles 2.5 kW PEP or 1 kW CW. 60 dB isolation at 300 MHz. 50 dB isolation at 450 MHz. Unused terminal grounds for static protection. *HRO Price $25.95*

MFJ-1704 Coax Switch 4 positions plus center ground, 50 ohm. Rated to 500 MHz with 0.2 dB loss. Handles 2.5 kW PEP, 1 kW CW, 50 dB isolation at 500 MHz. Includes a replaceable lightning protection device that reduces lightning surges and static. *HRO Price $63.95*

MFJ-1701 Antenna Switch 6 positions, 50-75 ohm. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions grounded. *HRO Price $49.95*

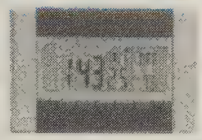
MFJ-1700B Antenna / Transceiver Switch 1-6 antennas, 1-6 rigs. Tuner, SWR meter, linear etc. in line to operate any combination. 50-75 ohms. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions grounded. *HRO Price $69.95*

Hy-Gain Rotators



Hy-Gain HAM IV The most popular rotator in the world. Designed for medium communications arrays of up to 15 square feet. New low temperature grease permits normal operation down to -30 degrees F. New alloy ring gear gives extra strength up to 100,000 PSI. New indicator potentiometer, new ferrite beads to reduce RF susceptibility, new cinch plug connector plus 8-pin plug at the control box. Dual 98 ball bearing race for load bearing strength and electric locking steel wedge break prevents wind introduced antenna movement. North or South center of rotation scale on meter. Low voltage control. Order HAM-IVX for 220 volts. *HRO Price $529.95*

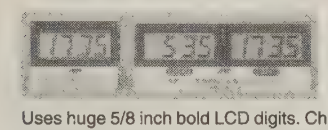
Clocks



MFJ-124 24 / 12 Hour Clock MFJ Atomic Desk Clock. This tiny, radio-controlled 24/12 hour awitchable LCD clock has dual alarm, snooze and a bright backlight. Includes month and day display, indoor temperature (14F-122F) and US time zone map display. Operates on two AAA btteries (not included). Five button operation. Attractive black and silver cabinet fits in your hand. *HRO Price $24.95*

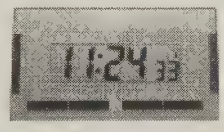
MFJ-105C 24 Hour Quartz Wall Clock. Handsome black. 10" diameter face, sweep second hand. Uses single "A" battery (not included). *HRO Price $19.95*

MFJ-113 MFJ 24/12 Hour Desk Clock with bright red LED's. easiest to see in any room!. Giant 1.8 inch LEDs with switchable 24/12 hour display, 9 minute ID timer, alarm, 9 volt batter backup and 110 VAC operation Compact size: 9Wx4Hx2.5D inches. See in the dark across the room. *HRO Price $19.95*



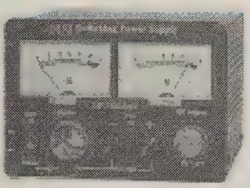
MFJ-107B & 108B 12 / 24 Hour Clocks

Uses huge 5/8 inch bold LCD digits. Choose from the dual clock that has UTC and local display or the single 24 hour clock. Brushed aluminum frame. Easy set. *HRO Prices MFJ-108B $19.95; MFJ-107B $9.95*



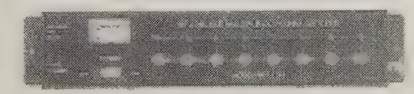
MFJ-123 Eternity Atomic Clock This clock works for an eternity! Never needs batteries – solar powered by room light. Never needs to be set – time set by WWVB to milliseconds. Jumbo LCDs measure 2 inches tall! 24/12 switchable time format, seconds display, day-of-the-week, month, date years displays. Desk top or wall mount. *HRO Price $79.95*

Power Supplies / Outlets



MFJ-4225MV MightyLite™ Switching Power Supply. 25 amps surge, 22 amps continuous. No RF hash! Low ripple, highly regulated. Great review by QST Magazine!. Over-voltage and over-current protection circuits. Switchable AC input voltage, works for 85 to 135 VAC or 170 to 260 VAC. Replaceable fuse. Large 3 inch meter. Tiny, only weighs 3.7 pounds. *HRO Price $149.95*

MFJ-4245MV Similar to MFJ-4225MV but handles 45 amps surge and 40 amps continuous. *Weighs just 5.5 pounds HRO Price $199.95*

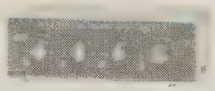


MFJ-1118 High Current Multiple DC Outlet. Gives you two HF and/or VHF transceivers and six or more accessories from your transceivers's main 12 VDC power supply. *HRO Price $69.95*

MFJ-1116 Deluxe Multiple DC Power Outlet. 8 outlets for powering accessories. *HRO Price $49.95*

MFJ-1112 like MFJ-1116 without ON / OFF switch, voltmeter and fuse. 6-pair outlets. *HRO Price $34.95*

Keyers & Code Tutors



MFJ-407D Deluxe Electronic Keyer Dot-dash memories, self-completing dots and dashes, jam-proof spacing, RF proof, instant start. Single squeeze, or straight key. Controls include speed, weight, tone and volume. ON/OFF, tune auto / semi-auto, built-in speaker, 9V battery (not included) or 110 VAC with optional MFJ-1305. *HRO Price $69.95*

MFJ-418 Pocket Size Morse Tutor. Learn from zero code speed to Extra Class with customized code practice. Random, QSO mode, word recognition mode. Easy-to-use menu. Uses 9V battery. *HRO Price $79.95*

MFJ-461 Pocket Code Reader Place this pocket-sized code reader near your receiver's speaker and watch Morse code signals turn into English text messages scrolling across an easy-to-read LCD display. No cables to hook-up, no computer, no interface, no other equipment needed! Use it as a backup in case you mis-copy a few characters. Practice by copying along with the MFJ-461. It'll help you learn the code and increase your speed as you instantly see if you're right or wrong. Learn Morse code anywhere, anytime. MFJ's proven Beginner's Course takes you from zero code speed to solid copy fast! Realistic plain English QSO practice helps you pass your FCC Code exam. *HRO Price , $79.95*

MFJ-422D Keyer/ Bencher Paddle combo features. Iambic keying, adjustable weight and tone, front panel volume/speed controls (8-50 WPM), dot-dash memories, sidetone, speaker and automatic or semi-auto / tune modes. Use 9 V battery or 110 VAC with optional MFJ-1305 *HRO Price $169.95*
MFJ-422DX Keyer only. Mount to your Bencher paddle. *HRO Price $79.95*

MFJ-557 Deluxe Code Practice Oscillator has a Morse straight key on a non-skid heavy steel base with volume control, tone control, earphone jack, external speaker plug, 9 V battery (not included) or optional AC power supply. Built-in speaker, adjustable contacts. *HRO Price $34.95*

MFJ-434 Contest VOICE Keyer™ Microprocessor controlled keyer calls CQ, sends your call and does contest exchange in your voice! Five natural sounding messages in a total of 75 seconds. Repeat messages continually, varying the repeat from 3-500 seconds. Receive audio jack, stop button, PTT mike button, or VOX PTT line. Remote jack. *HRO Price $169.95*

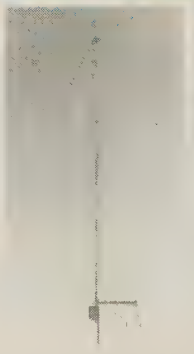
Filters / Surge Protect

MFJ-270 Lightning Surge Protector. Safeguard your radio equipment from damaging static electricity and lightning induced surges. Ultra-fast gas discharge tube safely shunts up to 5000 amps of peak impulse current to an independent ground. Use up to 1000MHz. Insertion loss < 0.1 dB. Low SWR to 1.1:1. Does not protect against a direct lightning hit. *HRO Price $29.95*

MFJ-1026 Noise Filter wipes out interference on all modes SSB, AM, CW, FM on frequencies from 1.5 to 30 MHz. Wipes out lightning crashes, severe power line noise from arcing transformers, lamp dimmers, touch control lamps, electric drills, motors, industrial processes, etc. Dig out weak stations, eliminate unwanted signals. Better than a phased antenna. Connects between transceiver and transmitting antenna. RF sense T/R switch bypasses transceiver when you transmit. Adjustable delay time. Uses 12VDC or 110 VAC with MFJ-1231B ($12.95). *HRO Price $169.95*

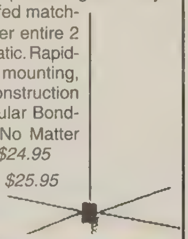
MFJ-704 Low Pass Filter suppresses TVI, RFI, phone and other interference. Handles full legal power with 2:1 SWR for 1.8-30 MHz. *HRO Price $49.95*

HF Antennas



HF Vertical Antenna No Radials

MFJ-1798 Halfwave Vertical. Covers 10 bands: 75/80, 40, 30, 20, 17, 15, 12, 10, 6 and 2 meters. No ground radials or ground needed because of the effective counterpoise that is 12 feet across. Mount it from ground level to roof top. The feed line is isolated from the antenna using MFJ's Air-Core™ balun. Achieves full-sized performance with full size radiators for 2 – 20 meters and high efficiency end-loading for 30, 40 and 75/80 meters. UPS shippable.
MFJ-1796 6 Band Vertical *HRO Price$199.95*
MFJ-1798 10 Band Vertical. Covers 75/80. 40, 30, 20, 17, 15, 12, 10, 6, 2 meters. *HRO Price $279.95*

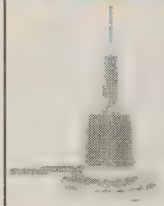


MFJ-1750 5/8 Wave Ground Plane 300 watt antenna for 2 meters gives you maximum possible gain of any single element antenna. Shunt fed matching network for lowest SWR over entire 2 meter and bleeds off unwanted static. Rapid-tune Radiator™, single U-bolt mounting, strong lightweight aluminum construction protected by Permanent Molecular Bonding Technology™ and 1 year No Matter What™ guarantee. *HRO Price $24.95*

MFJ-1752 220 MHz *HRO Price $25.95*

MFJ-1740 1/4 Wave Ground Plane *HRO Price $19.95*

Mobile Antennas



MFJ-1724B Mobile Magnetic Mount Dual Band antenna gives you quarter wave stainless steel whip for 2 meters and 440 MHz, coax and connector. Low SWR, 200 watts. *HRO Price 16.95*
MFJ-1728B Mobile Magnetic Mount 5/8 wave 2 meter antenna, covers 144-174MHz , low SWR, 300 watts. *HRO Price 29.95.*
MFJ-1729 Mobile Magnetic Mount super gain dual band antenna. *HRO Price 34.95.*
MFJ-1734 Dual Band Glass Mount 144 / 440MHz antenna gives 2.6 dB gain on 2 meters and 6.3 dB on 440 MHz. Low SWR on both bands. Free BNC adapter is included for handhelds. HRO Price $39.95
MFJ-1738 2-meter Glass Mount Antenna handles 50 watts with 2.6 dB gain, low SWR over entire 2 meter band. *HRO Price. $29.95*

Dummy Loads

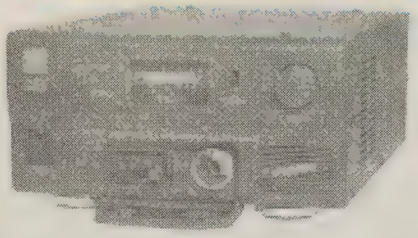
MFJ-250 1 kW Dummy Load 50 ohm oil-filed dummy load. Low VSWR to 400 MHz. Rated 1 kW CW or 2 kW PEP for 10 minutes. 1/2 rating for 20 minutes. 200 watt CW or 400 watt PEP continuous. Includes high quality transformer oil (no PCB). *HRO Price $59.95*

MFJ-260C VHF/HF Air Cooled Dry Dummy Load. Covers 0-650MHz. 300 watts for 30 seconds. Has derating curves. SO-239 connector. *HRO Price $34.95*

MFJ-264 UHF / VHF / HF Dry Dummy Load covers up to 650 MHz, usable to 750 MHz. Rated 1.5 kW for 10 seconds, 100 watts continuous. *HRO Price $69.95*

POWER SUPPLIES

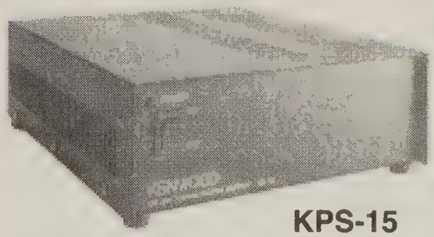
DIAMOND



Switching Mode DC Power Supply GZV4000

The GZV4000 switching mode DC power supply has a 40 amp continuous rating at 100% duty cycle. The supply has variable voltage from 5-15 VDC using a voltage control knob with a center detent at 13.5 VDC. There is overload and short circuit protection with current feedback at approximately 42 amps and temperature protection with a variable speed fan.An AC line filter provides EMI protection. The meter selector allows monitoring of voltage and current. Power and overload indicators are included. Connect your rig easily with front panel DC terminals and a cigarette lighter jack. The unit has in internal 8 ohm speaker. Operates on 120 VAC ± 20%, 50-60 cps. Ripple and noise is less than 8mV rms.
HRO Price: $199.95

KENWOOD



KPS-15

The KPS-15 is a compact, switching power supply for high current applications. It is rated at 23 amps and is similar in size to the TS-50. The supply is for 110-230 VAC. Weighs only 4.5 pounds.
Suggested List Price $229.95

PS-52

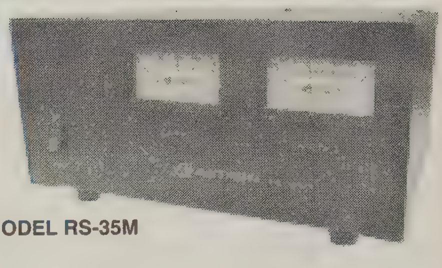
Kenwood's largest is designed to use with the TS-850, operating all modes for the rated periods of time. Provides 13.8 VDC at 22.5 A. Has a cooling fan and protection circuits. Can be used with all Kenwood 12 VDC radios.
HRO Price 279.95

PS-53

Designed for the TS-570 D/S(G) operating all modes for the rated periods of time. Provides 13.8 VDC at 20.5 A. Has a cooling fan and protection circuits.
HRO Price $269.95

ASTRON CORPORATION

All of Astron's solid-state electronically regulated **Power Supplies** have fold-back current limiting to protect from excessive current and a heavy duty heat sink. Output voltage: 13.8 VDC ±.05 volts. 220 V supplies available on special order at slightly higher price.



MODEL RS-35M

RS-A Series Standard power supply with on / off switch. Voltage may be adjusted internally.

SL Series Slim Line design for low-profile looks.

RS-M Series Power supply with front meters. One is for voltage and the other current.

SS Series High efficiency switching supplies specially filtered for use with communications equipment for all frequencies including HF. Heavy duty design, low profile, light weight and EMI filter.

VS-M Series Variable power supplies with separate volt and amp meters. Adjustable output: 2-15 volts.

RM Series 19" x 5 1/4" rack-mount power supplies available with or without meters and may be variable. The new RM-60 comes with or without meters.

Power Supplies

Brand	Model	Cont.Duty 13.8 VDC	Intermit Duty	Height in	Width in	Depth in	Weight lbs	HRO Price
Alinco	DM-330MVT	30 A	32A	2.75	7	7	5	$179.95
Astron	RS-4A	3 A	4 A	3.75	6.5	9	5	$39.95
	RS-7A	5 A	7 A	3.75	6.5	9	9	$59.95
	RS-10A	7.5 A	10 A	4	7.5	10.75	11	$69.95
	RS-12A	9 A	12 A	4.5	8	9	13	$79.95
	RS-20A	16 A	20 A	5	9	10.5	18	$96.95
	RS-35A	25 A	35 A	5	11	11	27	$149.95
	RS-50A	37 A	50 A	6	13.75	11	46	$219.95
	RS-70A	57 A	70 A	6	13.75	13.75	48	$299.95
	RS-12M	9 A	12 A	4.5	8	9	13	$89.95
	RS-20M	16 A	20 A	5	9	10.5	18	$116.95
	RS-35M	25 A	35 A	5	11	11	27	$169.95
	RS-50M	37 A	50 A	6	13.75	11	46	$239.95
	RS-70M	57 A	70 A	6	13.75	12.12	48	$329.95
	RM-50A	37 A	50 A	5.25	19	12.5	50	$299.95
	RM-60A	50 A	55 A	7	19	12.5	63	$349.95
	RM-35M	25 A	35 A	5.25	19	12.5	38	$259.95
	RM-50M	37 A	50 A	5.25	19	12.5	50	$329.95
	RM-60M	50 A	55 A	7	19	12.5	63	$389.95
	VS-20M	16 A	20 A	5	9	10.5	20	$139.95
	VS-35M	25 A	35 A	5	11	11	29	$199.95
	VS-50M	37 A	50 A	6	13.75	11	46	$259.95
	SL-11A	7 A	11 A	2.75	7.62	9.95	11	$79.95
	SL-15R	12 A	15 A	2.75	7.62	9.95	14	$109.95
	SS-10	7 A	10 A	1.125	6	9	3.2	$80.95
	SS-12	10 A	12 A	1.375	6	9	3.4	$89.95
	SS-18	15 A	18 A	1.375	6	9	3.6	$99.95
	SS-25	20 A	25 A	2.875	7	9.375	4.2	$119.95
	SS-30	25 A	30 A	3.75	7	9.625	5	$129.95
Diamond	GZV4000	40 A	42 A	4.5	8.25	13	8	$179.95
Diawa	SS-330W	30 A	33 A	4	5	11	4.8	$169.95
	SS-505	50 A	55 A	4.3	8.5	11	8.25	$399.95
Icom	PS-85	15 A	20 A					$269.95
	PS-125	25 A	25 A	3.7	4.4	11.3	6.6	$349.95
Kenwood	KPS-15	20 A	23 A	2.38	7.1	8.88	4.5	$199.95
	PS-52	22.5 A	22.5 A	4.25	7	12.25	16	$279.95
	PS-53	22.5 A	22.5 A	6.81	3.78	11.66	15.2	$269.95
Samlex	SEC1212	10 A	12A	2.2	7	8.25	3	$79.95
	SEC1223	23 A	24 A	2.2	7	8.25	4	$89.95
Yaesu	FP-1023	23 A		2.25	6	8.25	4.2	$149.95
	FP-1030A	25 A	30 A					$239.95

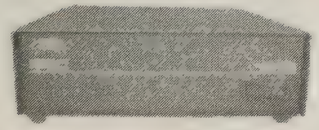
* Internal Supply
(220 volt versions of some models available at additional cost by special order. Contact HRO for details.)

POWER SUPPLIES

SAMLEX AMERICA

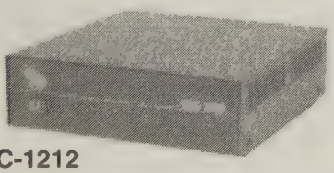
For Base Stations

Switching Mode Power Supplies



SEC-1223

Designed specifically for use as a land mobile base station power supply, the SEC-1223 uses Mosfet based switch mode technology for high reliability, high efficiency and minimum size and weight. The design reduces output ripple to levels previously available only from bulky, less efficient linear power supplies. It delivers high power with low RFI when used with HF, VHF, and UHF radios. Current limiting and safe operating area circuitry protects devices powered by the SEC-1223 from excess voltage. The supply operates from 100-130 or 200-260 volts and produces 23 Amps continuously, 24 Amps at 50% duty cycle for 5 minutes. UL and cUL approved. Complies with FCC Class B Part 15. 3 year manufacturer's warranty. **HRO Price $99.95**



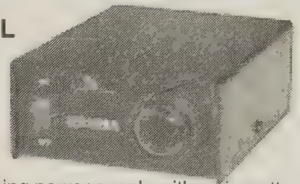
SEC-1212

Same cabinet size as the SEC-1223, this model provides 10 Amps continuous output power, 12 Amps 50% duty cycle and is highly filtered to provide clean power to HF, VHF, and UHF radios. . It is UL and cUL listed. 3 year manufacturer's warranty. **HRO Price $79.95**

Multi-purpose

Switching Power Supplies

SPS-1204UL



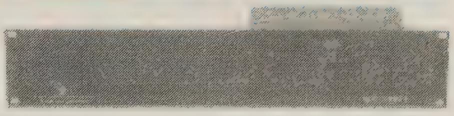
The compact SPS-1204UL is a 3.5 amp switching power supply with a cigarette lighter output socket in the front and a terminal output block at the back. Ideal for electronic projects, cellular phones and general applications. UL and cUL listed. **HRO Price $29.95**

SPS-1206

NEW!

Same as the SPS-1204UL except 5.5 amps. **HRO Price $39.95**

Rack Mounts



SEC-1223-R1

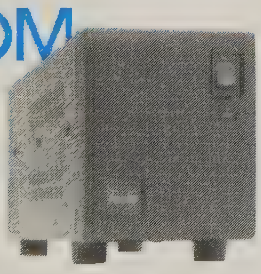
Industry proven SEC-1212 and SEC-1223 regulated DC power supplies are now available in 3.5" by 19" rack mount versions. All are UL and cUL Listed. 3 year manufacturer's warranty.

Model	Continuous Output Power	50% Duty Cycle	HRO Price
SEC-1212-R1	10 amps	12	$119.95
SEC-1223-R1	23 amps	24	$129.95
SEC-1223-R2*	23 amps	24	$229.95

*One rack holding 2 SEC-1223 23-amp power supplies.

Rig-Matching Power Supplies

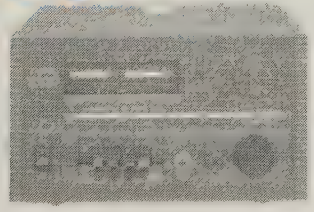
ICOM



PS-125

This is the matching supply for the IC-756PRO. It will work with all Icom HF radios. 25A continuous switching supply. **HRO Price $299.95**

YAESU



FP-1030A

Yaesu has power supplies primarily designed for use with their HF rigs. These include the **FP-712, FP-1023** and the **FP-1030A** and are low profile switching supplies.

Switching Supplies

DAIWA

Daiwa switching power supplies are one-third the weight and one-half the size of conventional power supplies. Daiwa models can be used for DC motors that require peak starting currents and will accept input voltage from 90-130V. Switching supplies can create pulse noise, but Daiwa engineers have isolated any noise and moved it out of the amateur bands creating a super quiet power supply.

SS-330W: 30 amp

- 30 amps continuous voltage (33 amps peak).
- Voltage adjustable: 5-15V.
- Dual meters, amp and voltage.
- Automatic cooling fan built in.
- Weight: ONLY 4 lbs 14 ozs.
- Dimensions: 5" x 4" x 11" (approx).
- Ripple voltage: less than 10 mV.
- Short circuit protected.
- Carry handle for portability.

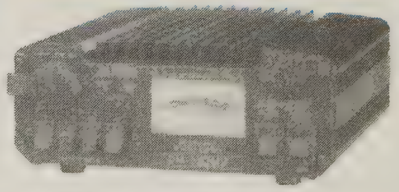
HRO Price $169.95

SS-505: 50 amp

- 50 amps continuous voltage (55 amps peak).
- 50 amps available at all output voltages.
- Voltage adjustable: 5-15V.
- Binding posts on back, cigarette-lighter socket and spring loaded connectors on front.
- Voltage fluctuation: less than 1.5%.
- Dual purpose meter – amp and voltage.
- Automatic cooling fan built in.
- Weight: ONLY 8 lbs 4 ozs.
- Dimensions: 8.5" x 4.3" x 11" (approx).
- Ripple voltage: less than 5 mV.
- Short circuit protected.
- Carry handle for portability.
- Perfect for industrial, laboratory, or ham use.

HRO Price $399.95

ALINCO



DM-330MVT
Switching Power Supply

Super compact, lightweight power supply is great for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit moves pulse noise. Short circuit protection. Convenient front panel connections. Cigarette plug socket. **HRO Price $149.95**

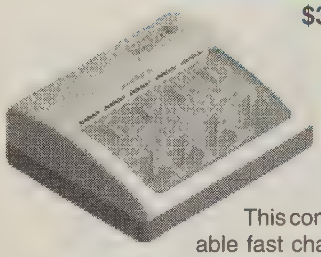
MAHA

BATTERY PACKS / CHARGERS

MH-C402W

AC / DC Fast Charger

$39.95



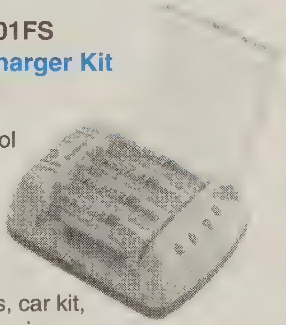
NEW!

This compact retractable fast charger for four AA/AAA batteries features an integrated automatic switching power supply and independent charging banks. Charge either NiCD or NiMH batteries.

MHC-401FS

Battery & Charger Kit

$49.95



- 100 minute cool charger.
- Comes with four PowerEx AA 2000 mAh rechargeable NiMH batteries, car kit, and battery carrying case.

MH-C204F - DC

Smart Charger with Car Kit

$29.95

- Charge 2/4 AA/AAA NiCD or NiMH cells in around 3 hours.
- Intelligent microprocessor for safe rapid charging.
- Condition and rejuvenate your batteries.
- Dual charging circuit.
- Kit comes with a cigarette plug DC cable to charge with a 13.8 V car system.

MH-FNB-72

Battery Pack for Yaesu FT-817

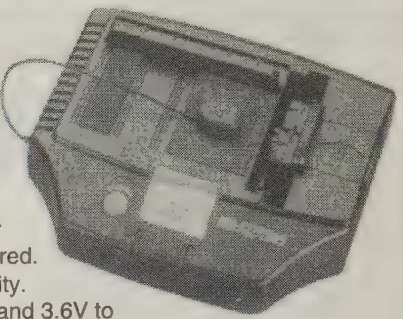
$59.95

- Ultra High Capacity 9.6V 1700 mAh NiMH battery pack.
- Includes a "**rapid charging cable**." Can be easily hooked up to a Maha MH-C777 or MH-C888 rapid charger.

MH-C777 Plus II

Universal Charger / Analyzer

$79.95



- Charge and analyze nearly any battery pack for ham radio and cellular.
- Intellegent microprocessor.
- Reset switch for easy operation.
- Supports AA, AAA, C, D in NiMH, NiCD or Lithium Ion. Optional battery holders required.
- Digitally displays voltage, time, and capacity.
- Supports 1.2V to 14.4V for NiMH & NiCD and 3.6V to 14.4V for Lithium Ion.

NiMH Ham Radio Battery Packs

Model	Volts (Vdc)	Capacity (Mah)	Compatible Handheld	HRO Price
MH-CNB-152	12	1000	ADI AT-201, 401	$59.95
MH-CNB-153	7.2	1300	Standard C-158, 228, 528	$49.95
MH-FNB-12	12	1000	Yaesu FT-470, 411, 811, 23R, 33R	$59.95
MH-FNB-17	7.2	1000		$49.95
MH-FNB-27	12	1000	Yaesu FT-530, 76, 415, 815, 729	$59.95
MH-FNB-31	4.8	650	Yaesu FT-51R, 41, 11	$49.95
MH-FNB-38	9.6	650		$59.95
MH-FNB-40H	7.2	1000	Yaesu FT-50R, 40, 10	$59.95
MH-FNB-41	9.6	1800		$55.95
MH-FNB-V47	7.2	1800		$69.95
MH-FNB-V57	7.2	1500	Vertex VX-400, VX-210	$49.95
MH-FNB-58LI	7.4	1200	Yaesu VX-5R, VX-7R	$59.95
MH-FNB-72	9.6	1700	Yaesu FT-817	$59.95
MH-BP-7	13.2	1000	Icom 2GA, 2AT, 4GAT, 12GAT	$69.95
MH-BP-8	8.4	1200	Icom 2GA, 2AT, 4GAT, 12GAT	$59.95
MH-BP-8H	8.4	1800	Radioshack HTX-202, 404	$69.95
MH-BP-83	7.2	1300	Icom W2A, 4SA, 2-3-24SAT	$49.95
MH-BP-132G	12	1300	Icom W21, 2GXAT, V21AT Gray	$59.95
MH-BP-132B	12	1300	Icom W21, 2GXAT, V21AT Black	$59.95
MH-BP-173	9.6	650	Icom W31, W32, T7A, T22, T44, Z1A	$69.95
MH-BP-180	7.2	1000		$49.95
MH-BP-196M	9.6	1350	Icom T2A, T2H	$49.95
MH-BP-199	6	700	Icom T8A, T81	$55.95
MH-BP-200	9.6	680		$59.95
MH-PB-8	12	1300	Kenwood TH77, 450T, 55AT, 26, 75	$62.95
MH-PB-17	12	1300	Kenwood TH-27, 247, 28, 48	$69.95
MH-PB-18	7.2	1300		$49.95
MH-PB-32	6	1000	Kenwood TH-22, 42, 79AD	$47.95
MH-PB-34	9.6	1000		$57.95
MH-PB-39	9.6	1050	Kenwood TH-G71A, D7	$59.95
MH-PB-39H	6	1800		$59.95
MH-PB-42LI	7.4	1800	Kenwood THF6A	$69.95

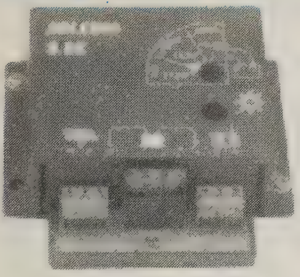
NiMH Rechargeable Battery Cells

Model	Volts (Vdc)	Capacity (Mah)	Description	HRO Price
MH-4AA230	1.24	2300	4 pack "AA" size NiMH Cells	$19.95
MH-2AAA800	1.24	800	2 pack "AAA" size NiMH Cells	$5.99
MH-2C350	1.24	3800	2 pack "C" size NiMH Cells	$19.95
MH-2D750	1.24	7500	2 pack "D" size NiMH Cells	$27.95

SOLAR POWER SYSTEMS

SunWize

All SunWize Products drop shipped to your location

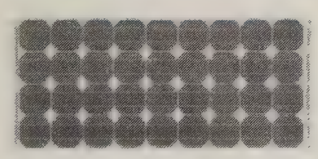


Steca Controllers

The SunWize-Steca Solsum controller is an economical pulse-width modulated shunt controller. A tricolor LED indicates three ranges of battery voltage and a green LED indicates current array. The Solsum controller features overcharge and over discharge protection, temperature compensated charging, MOSFET transistors and fuse protection. These controllers ensure maintenance-free operation and long product life. Available with or without a low-voltage disconnect.

The SunWize-Steca Gamma, Sigma and Omega controllers use an advanced control algorithm that sets new standards for solar charge technology. The self-learning controller automatically adjusts for the capacity and age of the battery. Patented hybrid regulator design combines both series and shunt technology for nominal power consumption. These controllers provide standard protection features as well as a tricolor information LED and tricolor state-of-charge LED. Available with or without an LCD.

Model	Voltage	Rated PV Current	Rated Load	Size (inches)	Weight (lbs)	HRO Price
Solsum 5.0X	12/24 VDC	5 A	5 A	3.4 x 3.85 x 1.37	0.22	$39.95
Gamma	12/24 VDC	12 A	12 A	7.4 x 4 x 1.93	1	$99.95
Sigma	12/24 VDC	20 A	20 A	7.4 x 4 x 1.93	1	$119.95
Omega	12/24 VDC	30 A	30 A	7.4 x 4 x 1.93	1	$150.95



Solar Modules

Even in severe environmental conditions, SunWise solar modules endure and continue to generate power reliably. They have been engineered for strength, durability, and dependable operation in any climactic region. SunWise modules feature single crystal-line solar cells that are textured and anti-reflection coated for maximum output. Both of the modules listed carry a 25 year warranty.

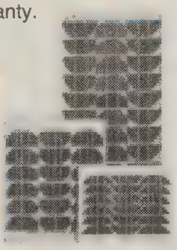
Model	Nominal Voltage	Rated Power	Rated Voltage	Rated Current	Size (inches)	Weight (lbs)	HRO Price
SP75	12/6 V	75 W	17/8.5 V	4.2/8.5 A	47.3 x 20.8	16.7	$489.95

OEM Solar Module Kits

NEW!

The Solar Module Kits include a solar module, the SunWise SW-1L6 prewired voltage regulator with output cable and a fixed tilt, 45" side-of-pole mount The waterproof controller has a multi-function LED indicator and fuse protection. 20 year warranty. OEM 5 and 10 kits include 5' cable and OEM 20 and 40 10' cable.

Model	Rated Voltage	Rated Power	Open Circuit Voltage	Rated Current	Size (inches)	Weight (lbs)	HRO Price
OEM5 kit	16.4	5 W	20.5	.31 A	11.82 x 9.84	7	$169.95
OEM10 kit	16.4	10 W	21	.61 A	15.15 x 14.76	8.5	$229.95
OEM20 kit	16.5	20 W	21	1.22 A	20.86 x 16.93	12.5	$299.95
OEM40 kit	16.7	40 W	21	2.40 A	38.38 x 17.13	18.5	$399.95



Uni-Solar Flexible Solar Battery Chargers

Unique technology solar modules are exceptionally durable and are designed for powering portable or portable/mobile stations. Blocking and bypass diodes allow output even under partial shading and ease paralleling when more power is required. Packaged with a fused power cable.

Model	Nominal Voltage	Rated Power	Rated Voltage	Rated Current	Size (inches)	Weight (lbs)	HRO Price
FLX-5	12 V	5 W	16.5 V	.30 A	21.8 X9.71	1.18	$95.00
FLX-32	12 V	32 W	16.5 V	1.94 A	56.27 X 16.7	4.7	$325.00

Deka

Batteries

5The valve-regulated, gelled-electrolyte Deka Solar batteries offer reliable, maintenance free power for renewable energy applications. All models 12 VDC. Sealed construction eliminates periodic watering, corrosive acid fumes and spills. The electrolyte will not stratify so no equalization is required. These batteries are rated non-spillable by ICAO, IATA and DOT. Safe to ship by truck or air.

Model	Weight (lbs.)	HRO Price
8GUI	24	$97.95
8G22NF	39	$139.95
3G27	64	$199.95

Model	Capacity @ 100 Hr. Rate	Capacity @ 20 Hr. Rate	Size (inches)
8GUI	36 Ah	31 Ah	7.75 x 5.13 x 7.25
8G22NF	56.5 Ah	48 Ah	9.4 x 5.5 x 9.25
8G27	98 Ah	86 Ah	12.75 x 6.75 x 9.87

System Package Recommendations

For a 5 Watt Transmitter
- 1 - OEM-20 Solar Module
- 1 - Deka 8GU1 Battery
- 1 - Steca Solsum 5.0X Controller
- Optional SWRGMOEM201
- Roof / Ground Mounting Bracket

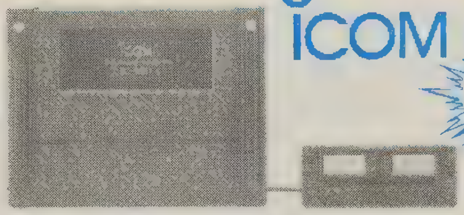
For a 25-50 Watt Transmitter
- 2 - Siemens SP75 Solar Modules
- 2 - Deka 8G27 Batteries
- 1 - Steca Sigma Charge Controller
- Optional SWRGMSP752
- Roof / Ground Mounting Bracket

For a 100 Watt Transmitter
- 5 - Siemens SW 100 Solar Modules
- 2 - Deka 8G27 Batteries
- 1 - Steca Solsum Omega Controller
- Optional SWRGMSR10004
- Roof / Ground Mounting Bracket

System recommendations are general guidelines. Contact HRO for a computer sizing of your solar powered ham radio appication. For large telecommunications applications, pre-packaged systems ranging from 500 W to 5000 W are available. Call for quotes.

AMPLIFIERS

HF + 6m Amplifier



ICOM

HRO
Discount Price
$CALL

IC-PW1

w/ Solid State Remote Control Head

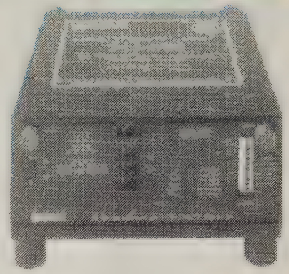
Icom's linear amp provides wide frequency coverage with up to 1kW output requiring only a 100-watt maximum input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands 160 to 15 meters plus 6 meters. Includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range so the PW1 to be used with almost any rig, not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle.

HF Amplifiers

SGC

SG-500 Domestic

$1299.95 – HRO Price



For 500 Watt operation in your base station or mobile, the SG-500 SmartPowerCube™ provides maximum reliability and unattended operation. The SG-500 is microprocessor controlled. It automatically monitors your power needs and selects the correct broadband filter. It also has the most advanced self-protection on the market. For maximum power, under the most demanding conditions, the SmartPowerCube is the professional's choice.

- 1.8 – 24 MHz
- 500 Watt PEP SSB, 500 Watt CW with fan
- Automatic band switching
- 13.2 L x 10.8 W x 6.1 H
- 21 Lbs.

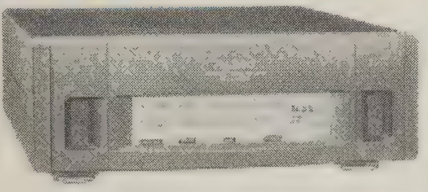
Maker	Model	Frequency Range	Modes	Power In	Power Out	Voltage	Current	Pre-amp	Connector	Wgt	HRO Discount Price
Ameritron	AL-1500	160-15 M*	SSB. CW	65 W	1500+ W	220 VAC	15 A	–	SO-239	50 lbs#	$2,599.95
	AL-1200	160-15 M*	SSB. CW	100 W	1500 W	220 VAC	15 A	–	SO-239	50 lbs#	$2,199.95
	ALS-500M	160-15 M*	SSB. CW	100 W	500 W	13.8 VDC	80 A	–	SO-239	7 lbs	$699.95
	AL-572	160-15 M*	SSB. CW	100 W	1300 W	110/220 VAC	12 A 110V		SO-239		$1,299.95
	ALS-600	160-15 M*	SSB. CW	100 W	600 W	110/220 VAC	16 A 110V	–	SO-239	13 lbs#	$1,129.95
	AL-80B	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	15/10 A	–	SO-239	54 lbs	$1,249.95
	AL-800	160-15 M*	SSB, CW	100 W	750 W	110 VAC	12 A	–	SO-239	67 lbs	$1,699.95
	AL-800H	160-15 M*	SSB, CW	55 W	1500 W	240 VAC	9 A	–	SO-239	69 lbs	$2,399.95
	AL-811	160-15 M*	SSB, CW	75 W	600 W	110/220 VAC	8/4 A	–	SO-239	40 lbs	$629.95
	AL-811H	160-15 M*	SSB, CW	75 W	800W	110/220 VAC	8/4 A	–	SO-239	41 lbs	$749.95
	AL-82	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	–	SO-239	52 lbs#	$2,199.95
Icom	IC-PW1	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC		–	SO-240	55 lbs	CALL
Mirage	A -1015G	50-54 MHz	All	10 W	150 W	13.8 VDC	23 A	yes	SO-239	5 lbs	$359.95
	B-34	144-148 MHz	FM	2 W	35 W	12-15 VDC	4 A		SO-239	2 lbs	$69.95
	B-34G	144-148 MHz	FM	2W	35 W	12-15 VDC	4 A	yes	SO-239	2 lbs	$89.95
	BD-35	143-149/430-450	FM	7 W	45 W	12-15 VDC	7 A		SO-239	3 lbs	$149.95
	B-215G	144-148 MHz	All	2 W	150 W	13.8 VDC	20 A	25 dB	SO-239	5 lbs	$309.95
	B-310G	144-148 MHz	All	4 W	100 W	13.8 VDC	15 A	yes	SO-239		$189.95
	B-1018G	144-148 MHz	All	10 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	$349.95
	B-1030G	144-148 MHz	All	10 W	300 W	13.8 VDC	48 A	yes	SO-239		$649.95
	B-2516G	144-148 MHz	All	25 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	$289.95
	B-2530G	144-148 MHz	All	25 W	300 W	13.8 VDC	48 A	yes	SO-239	15 lbs	$649.95
	B-5016G	144-148 MHz	All	50 W	160 W	13.8 VDC	24 A	yes	SO-239		$289.95
	B-5030G	144-148 MHz	All	50 W	300 W	13.8 VDC	48 A	yes	SO-239		$629.95
	C-22G	222-225 MHz	All	2 W	20 W	13.8 VDC	5 A	yes	SO-239	2 lbs	$159.95
	C-211G	222-225 MHz	All	2 W	110 W	13.8 VDC	20 A	yes	SO-239	5 lbs	$299.95
	C-1012G	222-225 MHz	All	10 W	120 W	13.8 VDC	5 A	yes	SO-239	5 lbs	$329.95
	C-2512G	222-225 MHz	All	25 W	120 W	13.8 VDC	20 A	yes	SO-239	5 lbs	$299.95
	C-2522G	222-225 MHz	All	30 W	200 W	13.8 VDC	42 A	yes	SO-239		$639.95
	D-15N	425 - 450 MHz	All	2 W	15 W	13.8 VDC	3 A	–	N type		$159.95
	D-26N	430-450 MHz	All	2 W	60 W	13.8 VDC	12 A	–	N type	2 lbs	$259.95
	D-1010N	430-450 MHz	All	10 W	100 W	13.8 VDC	20 A	–	N type	5 lbs	$379.95
	D-3010N	430-450 MHz	All	30 W	100 W	13.8 VDC	20 A	–	N type		$329.95
	D-100-ATVN	429 MHz ATV	All	1 W	52 W	13.8 VDC	20 A	–	N type		$379.95
	D-1010-ATVN	430 MHz ATV	All	10 W	100 W	13.8 VDC	20 A	–	N type		$389.95
SGC	SG-500	Domestic	SSB,CW		500 W	13.8 VDC	**				$1,299.95
Yaesu	Quadra System	160-15 M*+ 6m	SSB, CW	100 W	1000 W	110/220 VAC	†	–	SO-239	33 lbs	$3,999.95

* Owner modifiable for 10 m # Add 35 pounds for transformer shipped in separate package. ** SGC PS-50 recommended † VP-1000 power supply incl

SWR / WATT METERS

HF Amplifiers

YAESU



Quadra System

$3999.95 – HRO Price

Here's all the linear amplifier you should need for operation on both HF (160 to 15 meters) and 6 meters. It provides automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990, and the FT-900 HF radios.

The amp has 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC. The separate power supply, the VP-1000 allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 watts out on HF and 500 watts on 6 meters. At 117 VAC the output is reduced to 500 watts on HF.

The amplifier comes equipped with a built-in high speed antenna tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

HRO will provide 10 meter modification information to amplifier customers upon receipt of a copy of your valid, current amateur radio license.

Patch Cables

VAN GORDEN

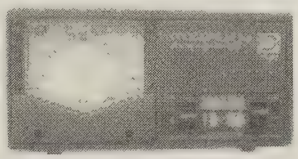
Use Van Gorden Patch Cables to connect your amp to your rig. They are made from RG-8X coax with silver teflon PL-259 connectors. Use the longer cables for antenna runs.

Model	Length (feet)	HRO Price
8X-1.5ST	1.5	$6.99
8X-3ST	3	$11.99
8x-6ST	6	$12.99
8X-12ST	12	$14.95
8X-18ST	18	$18.95
8X-25ST	25	$24.95
8X-50ST	50	$29.95
8X-100ST	100	$49.95

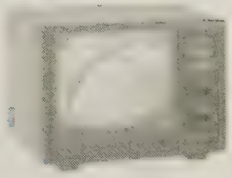
DAIWA

CN-101

- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- Easy to read meter.
- PEP monitor function
- Illuminated meter, 12vdc plug provided.



	CN-101
Frequency	1.8 - 150 MHz
Power Range	15 /150 / 1.5 KW
Power Rating	1.5 KW (1.8-60 MHz) 1 KW (144 MHz)
SWR Detection	4 W minimum
HRO Price	$99.95

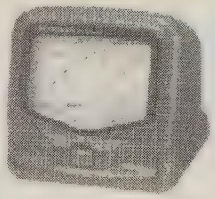


CN-801
Professional Series

- Easy to read, illuminated, extra large meter face with mirrored graph in .5 watt increments.
- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- PEP monitor function
- Illuminated meter, 12vdc plug provided.

	CN-801H	CN-801V	CN-801S
Frequency	1.8-200 MHz	140-525 MHz	900-2500 MHz
Power Range FWD	20/200/2k W	20/200 W	2/20W
Impedance	50Ω	50Ω	50Ω
Connectors	SO-239	SO-239	N-Type
SWR Detection	5 W minimum	5 W minimum	0.5 W minimum
HRO Prices	$129.95	$149.95	$229.95

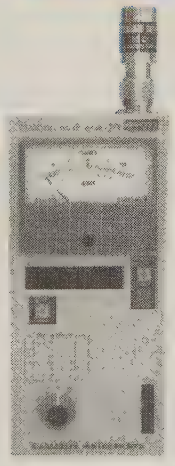
DIAMOND



SX-40C

Diamond RF SWR / Watt meters cover the full range of amateur applications. The SX-20C and SX-40C are the newest models. The SX-40C can be used on 220 MHz with a correction factor.

Analyzer



NEW!

BR-210

Laboratory grade precision instrument for analyzing antenna systems and other equipment without the need of a separate transmitter. Perform SWR and impedance measurements. Covers 1.8-170 MHz. Features a high precision meter, 500 mW 50 ohm dummy load, impedance measurements 12.5-300 ohm and SO-239 connector. **HRO Price $429.95**

SX-1000

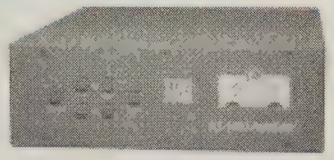
All models:

- Illuminated meters.
- Require 12 volts DC.
- Low insertion loss generally less than 0.2 dB in HF range and 0.3 dB at higher frequencies.
- Power measurement accuracy is generally ±10% on the higher power ranges and ±5% on the lower.
- Low loss SO-239 connectors are used except for the high frequencies as noted in the table.
- Measurements are forward power, reflected power, SWR &, on selected frequencies, PEP monitor.

Diamond Meters

Model	Freq MHZ	Power Ranges	Connector	HRO Price
SX-20C	3.5-30 50-54 130-150	30/ 300 W	SO-239	$89.95
SX-40C	144-470	15/ 150 W	SO-239	$79.95
SX-100	1.6-60	30/ 300/ 3KW	SO-239	$129.95
SX-200	1.8-200	5/ 20/ 200 W	SO-239	$89.95
SX-400	140-525	5/ 20/ 200 W	SO-239	$109.95
SX-600	1.8-160 140-525	5/ 20/ 200 W	SO-239	$169.95
SX-1000	1.8-160 430-450 800-930 1230-1300	5/ 20/ 200 W	SO-239 Type N Type N Type N	$199.95

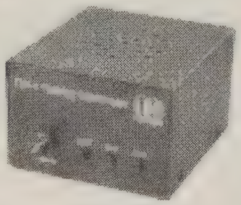
LDG ELECTRONICS



AT-1000
Automatic Antenna Tuner

HRO Price $499.95

The AT-1000 is a major step forward in power handling capability for desktop autotuners and is under $600. The microprocessor controlled L-network works automatically analyzing the SWR and adjusting discrete components at speeds much faster than be accomplished manually. In most cases, a match of 10:1 SWR can be lowered to 1.5:1 in three seconds or less. 200 fast memories decrease re-tuning time to less than a half second. Features a dual cross reading meter which monitors forward and reverse power simultaneously as well as SWR. Supports from 20 up to 1000 watts maximum power. (100 watts on 6M) Requires 11 to 15 volts DC at 1 amp. Covers 1.8 to 54 MHz. For coax fed antennas.



NEW!

TW-1
Talking Wattmeter

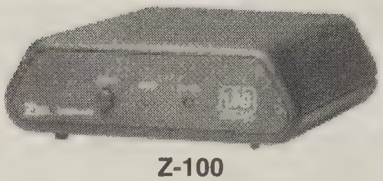
HRO Price $149.95

The TW-1 Talking Wattmeter is the perfect accessory to your shack if the operator is sight impaired, has bad eyesight or just needs to keep their attention on something else. It reports Forward, Reverse or SWR in three different languages; English, Spanish, and German. The continuous tone mode is great for making tuner or amp adjustments. Covers 1.8 to 54 MHz at 0 to 2000 watts with 5% accuracy (10% on 6 meters) and requires 11 to 15 volts DC at 200 mA. The size is 5"d x 4.5"w x 3"h.

RT-11
Remote Automatic Antenna Tuner

HRO Price $199.95

This low cost remote antenna tuner is housed in a water-resistent, high impact, ABS plastic enclosure. Its small size (8.5 x 5.5 x 3 inches) makes it easy to install in mobile, marine, or tower application. Interfaces easily to any HF radio and has built-in Icom and Alinco interconnectivity. Optional remote head allows easy control from any location. Handles 0.1 to 125 watts (50W on 6m). Covers 1.8 to 54 MHz

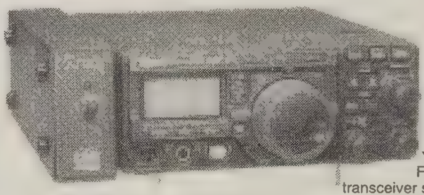


Z-100
Low Cost Antenna Tuner

HRO Price $149.95

The Z-100 is the first 0.1 to 125 watts (50W on 6m) automatic antenna tuner for under $150. Power consumption is nearly ZERO amps when not tuning, making it perfect for portable operation with batteries. The small footprint is ideal for small 100 W or QRP radios. 200 fast memories makes tuning time nearly instantaneous.

The tuner uses LDG's standard efficiency, microprocessor-controlled, switched "L" network to work with dipoles, verticals, inverted vees and other coax fed antennas. LEDs indicate SWR and status. Covers 1.8 to 54.0 MHz. Optional 4:1 baluns for tuning up to 3200 ohms and random length, long wire or ladder line. Optional interfaces for Icom, Alinco, Kenwood and Yaesu radios.



Yaesu FT-897 transceiver shown for illustration purposes

AT-897
Automatic Antenna Tuner

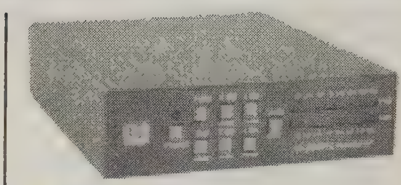
HRO Price $199.95

This specialized bolt-on automatic antenna tuner is designed for the Yaesu FT-897. The unit is a good replacement for the Yaesu FC-30. Power consumption is nearly ZERO amps when not tuning, making it perfect for operation with batteries. A second CAT port allows simultaneous use of computer control and automatic antenna tuner. The AT-897 quickly tunes a wide variety of coax fed antennas and lowers SWR from 10:1 down to 1.5:1 or less. 200 fast memories decrease re-tuning time ot less thah a half second.

Tuning time is 0.5 to 8 seconds with 4 seconds average. It covers 1.8 to 54.0 MHz and tunes a 6 to 800 ohm loads. An optional external Balun allows tuning of random length, long wire and other antenna systems. Now includes Y-ACC cable.

LDG Accessories and Items

Model	Description	HRO Price
RBA-1:1	Remote 1:1 balun	$30.95
RBA-4:1	Remote 4:1 balun	$30.95
RT Remote	RT Remote Head	$39.95
Icom-IC1	Icom Interface 10 ft	$20.00
Icom-IC2	Icom Interface 1 foot	$8.95
AL-IC1	Alinco Interface 10 ft	$20.00
K-OTT	Kenwood Interface	$59.95
Y-ACC	Yaesu Interface	$12.95
Y-OTT	Yaesu Interface	$59.95



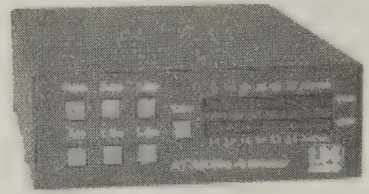
NEW!

AT-200Pro
Memory Autotuner

HRO Price $CALL

The AT-200Pro is s full featured, frequency sensing (tunes on SSB), memory autotuner designed for today's HF radios. A built-in two-position antenna switch and 16,000 3-D memories support up to four antennas on each switch position. The function key allows multiple uses of front panel button for auto/semi mode, peak/average reading, 200/20 watt scale and other user definable parameters.

- Handles 5 to 200 watts (SSB and CW) with 100 watts on 6 M.
- More than 16,000 3-D memories for instant band changing.
- Two position antenna switch with separate memories for each antenna.
- 1.8 to 54 MHz coverage. Built in frequency sensor.
- Easy to read LED bargraph for power, SWR and status.
- Initial tuning time 0.5 to 6 seconds. < 0.2 seconds recall tune.
- Tunes 6 to 1000 ohms (16 to 150 ohms on 6M). 6 to 4000 ohms with optional 4:1 balun.
- Power requirements 11 to 15 volts at 750 mA.
- Size 9 d x 7 w x 2 h. Weight 2 pounds.



AT-100Pro
Memory Autotuner

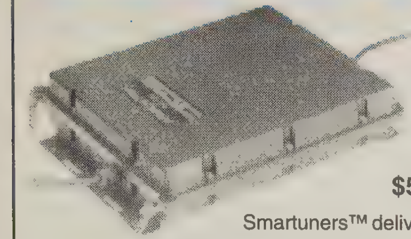
HRO Price $CALL

The AT-100Pro is a full featured, frequency sensing (tunes on SSB), memory autotuner designed for today's HF radios. Includes a built-in two-position antenna switch and 2000 memories on each switch position. The function key allows multiple uses of front panel button for auto/semi mode, peak/average reading, 100/10 watt scale and other user definable parameters.

The AT-100Pro has the same other specifications as the AT-200Pro except 1 to 125 watts (100 watts on 6M). Power requirements 11 to 15 volts at 500 mA., 7.5" x 5.5" x 2.0". Weight: 1.5 pounds

SGC

ANTENNA TUNERS



HRO
Discount Price
$499.95

HF-SSB Antenna Coupler SG-230

$595.00 – Suggested List Price

Smartuners™ deliver greater impedance matching, more tuning steps and more antenna choices than any other antenna coupler on the market. For frequency agility and precision tuning, choose a Smartuner. They are independently intelligent, matching ANY HF transceiver and ANY antenna. Smartuners are microprocessor controlled; analyzing the conditions of your antenna and automatically adjusting for the best match. They also remember each match, cutting retuning time to under 10 milliseconds when changing frequencies. Smartuners are available for power levels from 1.5 to 500 Watts and frequency ranges from 1.0 to 60 MHz. They provide all-purpose tuning ideal for base, mobile, portable, marine or aviation. Any budget, any installation… Your choice for antenna tuning should be an SGC Smartuner.

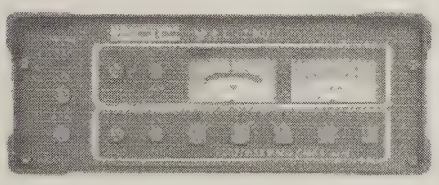
Zero Power Consumption Smartuner™

SG-211 – $179.95

HRO Discount Price

The SG-211, SGC's newest Smartuner provides the ZERO power consumption features you've wanted. This compact unit runs on 4 AA cells for 5 years. Lightweight, with no external power required, yet able to tune a 10:1 mismatch or worse. The unit features a naturally balanced output, capable of tuning most antennas. One external LED indicates tune, no tune and low battery. The SG-211 is the perfect companion for traveling or backpacking.

1.8 – 60 MHz • 1 – 60W • Rugged Aluminum Case • 8.5L x 5W x 1.5H • 1 Lb.



Master Antenna Controller

MAC-200 – $249.95

HRO Discount Price

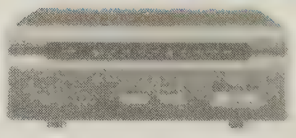
Select the right antenna, for the right band, at the right time with the MAC-200. The Master Antenna Controller operates as your base station control center, eliminating complicated switching and tuning. With two built in computers, the MAC-200 can select and tune up to 5 antennas automatically, quickly and accurately. Built in memories fine tune to minimum SWR with any balanced or unbalanced antenna. It instantly recalls settings from memory, allowing retuning in less than 10 milliseconds. Monitor your power and SWR with convenient meters on the front panel. Using SGC's well known Smartuner™ technology, the MAC-200 is the perfect choice for anyone using multiple antennas in a base station system.

1.8 – 60 MHz • 1.5 – 200W • 168 Memories • Pi Configuration • 230 mA average current • < 2 Second random set time • 8.5L x 6.5W x 3H • 5 Lbs.

SGC Smartuners™

Model	Frequency Range (MHz)	Power Rating (W)	Waterproof Enclosure	Base	Mobile	Portable	Marine Aviation	HRO Price
SG-211	1.8 - 60	1 - 60	No	X	X	X	X	$179.95
SG-230	1.6 - 30	3 - 200	Yes	X	X		X	$499.95
SG-231	1.0 - 60	3 - 100	Yes	X	X		X	$449.95
SG-235	1.8-30	3 - 500	Yes	X	X			$1,199.95
SG-237	1.8 - 60	3 - 100	Yes	X	X	X	X	$359.95
SG-239	1.8 - 30	1.5 - 200	No	X		X		$179.95

KENWOOD



AT-50

A fully automatic antenna tuner to use with the TS-50 and other 100 watt HF transceivers. Useful for both mobile or fixed operation. Accurate tuning by pressing the AT TUNE key on the TS-50. Can be installed remotely. **HRO Price $309.95**

ALINCO

EDX-2

This automatic tuner is designed for use with the Alinco DX-70 HF radio but may be adapted for use with most HF rigs. Tunes from 10 to 160 m with wire lengths of 8 to 80 feet (40' for 160m). **HRO Price $299.95**

YAESU

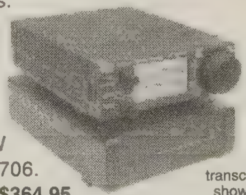
FC-800

This automatic antenna tuner operates with the FT-890 HF transceiver. The tuner is fully automatic and operations can be controlled from the front of the FT-890. **HRO Price $469.95**

ICOM

Icom's antenna tuners are automatic and, using the front panel controls, can be used with most HF exciters. Random wire and balanced line antennas cannot be used with the resonant antenna tuners. See the table on Page 13 for more tuner / radio compatibilities.

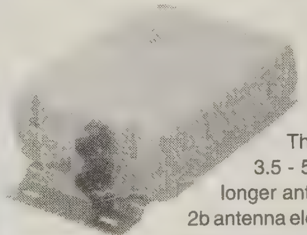
AT-180 Resonant Tuner



IC-706 transceiver shown for illustration purposes

Fully automatic 100 W tuner styled for the IC-706. HF/6 meters. **HRO Price: $364.95**

AH4 Random Wire Tuner



This automatic tuner covers 3.5 - 50 MHz with a 7 meter or longer antenna or the optional AH-2b antenna element (7 MHz to 50 MHz). Use with all Icom transceivers. Forty-five memories store channel information for quick tuning. Installation is simple: no adjustments are necessary. Just connect the control and antenna cables. Its small size allows installation in a variety of locations. **HRO Price $259.95**

CONNECTORS / CABLES / COAX

Connectors

Model	Description	HRO Price
306	BNC to UHF Adapter (BNC-255)	$5.99
609	N to UHF Adapter (4400)	$9.99
407TS	4 hole SO-239 Chassis Connector	$4.99
604	Double Male UHF (83-877)	$8.99
RFU536	UHF Barrel (83-1J)	$4.99
UG-363-4	Long UHF-UHF Barrel (83-1F)	$6.99
RFU532	RT. Angle Teflon, Gold Pin (83-1AP)	$8.99
RFU533	UHF "T" (83-1T)	$6.99
303	BNC to UHF Adapter (31-28)	$6.99
611	UHF to N Adpter (14000)	$8.99

Communications Cable

Times

LMR-200 – RG58 type

This is a standard RG58 'type' outdoor cable that is ideal for jumper assemblies, short antenna feeder runs, or any application requiring an easily routed, low loss RF cable. It has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 83%. It will withstand 1000VDC, a peak power of 2.5 kW, and shielding effectiveness is >90 dB.

LMR-240 – RG8X type

This is a standard RG8X 'type' outdoor cable that has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 84%. It will withstand 1500 VDC, a peak power of 5.6 kW, and shielding effectiveness is >90 dB.

LMR-400 – RG8 / RG213 type

This is a standard RG8 / RG213 'type' outdoor cable that has a solid BCCA inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 85%. It will withstand 2500 VDC, a peak power of 16 kW, and shielding effectiveness is >90 dB.

LMR-400-UltraFlex

Similar specification as LMR-400 with TPE jacket.

Call HRO for Low Discount Prices on Times Cable

Coax & Connectors

ANDREW.

Andrew coax and all the matching connectors you will need are available as a special order drop shipment. Contact your nearest HRO store for complete details.

Model #	Cable Type	Diameter Inches	$/100 feet*
LDF2-50	Foam Dielectric	3/8 inch	189.00
LDF4-50A	Foam Dielectric	1/2 inch	255.00
LDF5-50A	Foam Dielectric	7/8 inch	585.00
FSJ4-50B	Superflex	1/2 inch	373.00

*Plus Shipping

Antenna Rope

Synthetic Textiles

Black Dacron® Polyester

This antenna rope is constructed of strong, double braid Dacron® polester. It is black for UV protection and has excellent resistance to mildew and abrasion. The rope ties and cuts easily, sealing effectively with a hot knife. No expensive hardware is required. Sizes and prices shown in the chart.

Size	Model	Strength	HRO Price*
3/32"	ST-3/32-100	260+ lbs	$9.95
3/16"	ST-3/16-100	770+ lbs	$14.95
5/16"	ST-5/16-100	1790+ lbs	$19.95

* Price per 100 feet

Cable Assemblies

CABLE X-PERTS Ready-Made Coax Cable Assemblies

Model	Connector Both Ends	Burial	UV Resistant	Shields	Attenuation @ 100 Feet	Recommended Frequencies
CXP1318FC	PL259	Yes	Yes	2 (100% boonded foil + 95% TC Braid V/P 84%	50 MHz 1.1 150MHz 1.9 450MHz 3.3	50-450 MHz
CXP008C	PL259	No	Yes	1 (95% BC Braid) V/P 78%	10 MHz 0.51 30MHz 0.9 50MHz 1.2	1-50 MHz
CX1318FN	"N"	Yes	Yes	2 (100% boonded foil + 95% TC Braid V/P 84%	150MHz 1.9 450MHz 3.3	150 MHz and Higher
CXP08XC	PL259	No	Yes	1 (95% BC Braid) V/P 78%	10 MHz 0.98 30MHz 2.0	1 - 30 MHz
CPX213C	PL259	Yes	Yes	1 (97% BC Braid) V/P 66%	10 MHz 0.62 30MHz 1.2	1 - 30 MHz (High Power)

RG213/U w/PL259		
Part Number	**Length (feet)**	**HRO Price**
CXP213C100	100	$61.95
CXP213C50	50	$44.95
CXP213C6	6	$17.95
CXP213C3	3	$16.95
RG8/U Foam w/PL259		
CXP008C100	100	$49.95
CXP008C50	50	$38.95
CXP008C25	25	$24.95
CXP008C12	12	$24.95
CXP008C6	6	$19.95
CXP008C3	3	$18.95
RG8X-Mini w/PL259		
CXP08XC100	100	$49.95
CXP08XC75	75	$39.95
CXP08XC50	50	$29.95
CXP08XC25	25	$24.95
CXP08XC18	18	$18.95
CXP08XC6	6	$14.95
CXP08XC3	3	$11.95

9913-type Flexible w/N-Connector		
CXP1318FN150	150	$129.95
CXP1318FN100	100	$98.95
CXP1318FN50	50	$66.95
CXP1318FN25	25	$48.95
CXP1318FN6	6	$22.95
CXP1318FN3	3	$21.95
9913-type Flexible w/UHF Connectors		
CXP1318FC100	100	$84.95
CXP1318FC50	50	$48.95
CXP1318FC6	6	$17.95
CXP1318FC3	3	$14.95
Tinned Copper Ground Braid		
235	1" wide	$0.99/ft
2332	1/2" wide	$0.59/ft
23RT-5	1" 5 ft long*	$13.95
235RT-10	1" 10ft long*	$17.95
2332RT-5	1/2" 5ft long	$7.95
2332RT-10	1/2" 10ft long*	$9.95

* w/Ring Terminals

INSTALLATION ACCESSORIES

Coax-Seal

Coax-Seal will seal all types of coax fittings, baluns, antenna parts and connectors of any shape. Adheres to most surfaces. Wrap Coax-Seal around the object you want to protect and then mold it into shape. Keeps moisture out of the coax fitting on antenna feed lines. Need to make a change? Just remove it and start over. **HRO Price: $2.49 / roll**

Line Thrower

EZ HANG 2 can be used to "throw" a line up to 100 feet over a tree or other object. Cable pullers can use EZ HANG to "throw" a line through a dropped-ceiling/ plenum and avoid using long pull-rods. It cuts installation time and your cost dramatically.

EZ HANG's basic construction is steel attached to a reel that is corrosive resistant plastic and stainless steel. The reel comes with 300 feet of 10-pound-test monofilament line installed, a quick-disconnect clip to release the weight and an easy-to-see "bright yellow" one-ounce lead weight.

EZ HANG 2 Package

includes spare bands, 2 weights and clips and the EZ HANG
HRO Price $89.95

Note: This is a "slingshot" device. Before ordering, please check local laws regarding possession and/or use of a slingshot.

Cable Ties

RIP-TIE

Light Duty Cable Management

Reusable 300 Times

These are the perfect products for managing all those cables in the shack or computer room.

Model	Size		HRO Price
Y-05-010-BLK	1/2" X 5"	10 Pack	$7.95
Y-05-010-Rainbow	1/2" X 5"	10 Pack	$7.95
Y-08-010-BLK	1/2" X 8"	10 Pack	$9.95
Y-08-010-Rainbow	1/2" X 8"	10 Pack	$9.95
G-05-030-GRN	1/2" X 30 ft Roll		$4.95

Belden

Call for Belden Quotes

Coax

Coax can be purchased in any length up to 1000 feet. 1000' continuous lengths of 9913 or 8214 must be sent by truck.

8214 - RG8 / U

8214 is a standard RG8 /U, #13 stranded copper center conductor, cellular polyethylene insulation, 97% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 1.8 dB loss per 100' at 100 MHz. The most popular cable for HF/VHF/UHF. Use when long cable runs are not required.

RG213 / U

RG-213 / U coax, #13 stranded copper center conductor, solid polyethylene insulation, 97% bare copper shield, non-contaminating PVC jacket, 50 ohm impedance, 66% velocity factor and 2.2 dB loss per 100' at 100 MHz. This RG-8 type cable is best for HF use. It may be buried.

9913F-7

9913F-7 is RG8-type coax, #9.5 stranded copper conductor, foam polyethylene insulation, 100% foil plus 88% braid shield, PVC jacket, 50 ohm impedance, 84% velocity factor and 1.4 dB loss per 100' at 100 MHz. The best cable for VHF and UHF applications.

9258 - RG8X

RG8X is small diameter coax, #16 stranded copper center conductor, cellular polyethylene insulation, 95% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 3.7 dB loss per 100' at 100 MHz. Good for short VHF runs and most HF uses.

9356 - RG8 / U

100' roll of 8214 RG8 / U coax with PL-259 connectors (crimp type) installed on each end for your convenience.

Rotator Cable

HRO carries two **Belden rotator cables**. Use standard duty cable for runs up to 100 feet. For longer runs, please use heavy duty cable. Belden quality is **tops** in the industry.

8 wire, standard duty - Model 8448 - 8 wire cable using six #22 and two #18 tinned copper conductors. PVC insulation; chrome PVC jacket.

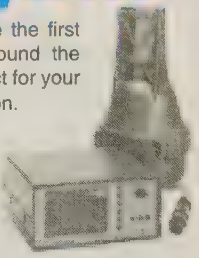
8 wire, heavy duty - Model 9405 - 8 wire cable using 6 - #18 m and 2 - #16 tinned copper conductors. PVC insulation; chrome PVC jacket.

When Ordering Cable

Please order cable in multiples of 50 feet. Continuous length spools up to 1000 feet are available. **Call for quotes.**

ROTATORS

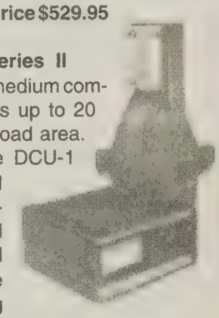
hy-gain



Hy-gain rotators are the first choice of hams around the world! One is perfect for your antenna configuration.

Ham - IV

The popular Ham-IV is designed for medium antenna arrays up to 15 square feet. It features a dual 98 ball bearing race for load bearing strengths and an electric locking steel wedge brake. Maximum mast size 2 1/16". **HRO Price $529.95**



Tailtwister Series II

This unit handles medium communications arrays up to 20 square feet wind load area. Available with the DCU-1 Pathfinder digital control box or standard analog control box. Has 138 ball bearings for large load bearing strength. Maximum mast size 2 1/16". **HRO Prices: T2X $599.95, T2XD $979.95**

Ham - V

For medium antenna arrays up to 15 square feet wind load. Includes the DCU-1 Pathfinder digital control unit. No more terminal strips. Features inch connector plus 8-pin plug at the control box. Maximum mast size 2 1/16". **HRO Price $949.95**

HDR-300A

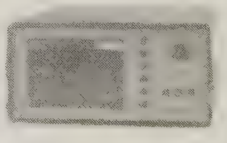
Choose this rotator for king-sized antenna arrays up to 25 square feet of wind load. Heavy-duty self-centering steel mast clamp and hardware. Digital display accurate to 1 degree. **HRO Price $1379.95**

AR-40

Especially for large FM-TV and compact communication antenna arrays up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Maximum mast size 2 1/16". Includes MSLD light duty lower mast support. **HRO Price $289.95**

CD-45II

The CD-45II handles up to 8.5 square feet of antenna wind load when mounted inside the tower or 5 square feet with the included MSLD light duty lower mast adapter. Has 58 ball bearing race. Maximum mast size 2 1/16". **HRO Price $389.95**

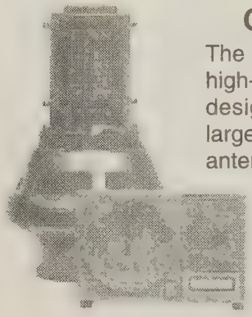


DCU-1 Pathfinder

A digital control unit for the T2S, Ham-IV and Ham -V rotators. **HRO Price $649.95**

YAESU ROTATORS

Yaesu's high quality rotators for amateurs include models for medium to large arrays and for satellite work. There are also provisions for computer control. Contact your nearest HRO for more specifications and discount prices on Yaesu products.



G2800DXA

The G-2800DXA is a high-technology rotator designed to turn the largest tower-mounted antenna arrays.

G-800SA / G-800DXA

The G-800 rotator series is designed for medium to heavy loads and antennas up to 20 square feet. The G-800DXA is the same as the G-800SA with the addition of presets.

Rotator Computer Controllers

Rotator	GS-23	GS-232	GS-232B
G-800S/SDX	✔	1	1
G-1000S/SDX	✔	1	1
G-2000S/SDX	✔	1	1
G-2300S/SDX	✔	1	1
G-2700S/SDX	✔	1	1
G-2800S/SDX	✔	1	1
G-800DXA			✔
G-1000DXA			✔
G-2800DXA			✔
G-5400B		✔	✔
G-5600B		✔	✔
G-5500		✔	✔
G-400		2	3
G-500	2	2	3
G-500A	2	2	3
G-500B	2	2	3
G-5500	2	2	3

✔ Fully Compatible
1. Requires C-1000 Interface Cable
2. Requires GX-500 Interface for GS232
3. Requires GX-500 Interface for GS-232B

G-1000DXA

The G-1000DXA is designed to handle bigger arrays up to 22 square feet. A great value.

G-450A

The G-450A is ideal for smaller HF and VHF/UHF antennas. Features 360 degree radial compass display with overlap.

HRO Price $629.95

G-5500

This is the most popular azimuth and elevation rotator for satellite, moon-bounce or other space communications work. It provides horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within ±4%. The G-5500 provides 180° elevation rotation with a rotation time of 67 seconds. A 360° azimuth rotation takes just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal cross-boom and 440 pounds of vertical load. Computer controllable with optional GS-232 computer interface. **HRO Price $649.95**

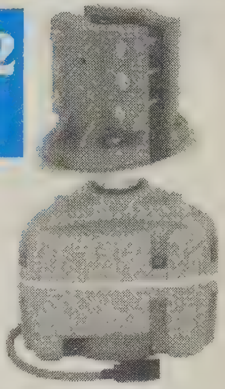
G-550

This is an elevation rotator for satellite work. The control box shows elevation in degrees. **HRO Price $249.95**

Rotator Separation Kit

For some applications it is desirable to separate the azimuth from the elevation rotator on the tower. This separation kit provides all the hardware for the rotator to implement this separation. **HRO Price $23.95**

M²



Orion OR-2800DC Rotator

The Orion OR-2800DC is engineered for long life, reliability and performance while turning large antennas or systems. It has a strong ductile iron mast clamp to support up to 3-1/8" masts (optional long bolts required), extended and hardened drive shaft, and prop-pitch style torque plate. The rotator housing fits inside most popular towers and mates to standard tower / rotator plates.

The RC2800P Control Box has digital readout, variable speed control, slow start, and reverse delay, programmability, preset, 2 rotator capacity, coast-down, true AZ readout-continuous and infinite limit position control. The USA-made OR-2800DC has a one year warranty. **HRO Price $1299.95**

Wind Area Capacity	35 sq. ft.
Starting Torque	4200 in. lbs.
Rotating Torque	3200 in. lbs.
Breaking Torque	17000 in. lbs
Vert. Load Capacity	1800 lbs.
Mast Size (O.D.)	1.75-3-1/8"
Rotation Speed (360)	55-270 sec.
Readout Accuracy	1 degree
Input Voltage	110/220 AC 50/60 Hz
Motor Voltage	28-42 VDC
Cable Type	8 conductor
Weight (Rotator unit)	42 lbs.

Rotator Specifications

	Model	Input Voltage	Motor Voltage	Rotation Time	Stationary Torque	Rotation Torque	Maximum Windload	Max. Vert Load	Max. Mast Size	Cable Type	Weight lbs (kg)	HRO Price
M2	OR-2800DC	110/220 VAC	28 VDC	55 sec	17,000 in lbs	3200 in lbs	35 sq ft	1800 lbs	3-1/8 in	8-wire	42 (19)	$1,299.95
Yaesu	G-450A	110 V	24 VDC	51 sec	217 ft lbs	39.8 ft lbs	10 sq ft	242 lbs	2 in	5-wire	7 (3.2)	$249.95
	G-800SA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	$349.95
	G-800DXA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	$399.95
	G-1000DXA	110 VAC	24 VDC	55 sec	5200 in lbs	79 ft lbs	22 sq ft	440 lbs	2.5 in	6-wire	15 (6.8)	$499.95
	G-2800DXA	110 VAC	24 VDC	55 sec	20,832 in lbs	219 ft lbs	34 sq ft	880 lbs	2.5 in	6-wire	26 (11.8)	$1,129.95
	G-5500	110 VAC	24 VDC	58 sec	289 ft-lbs	*	10.7 sq ft	440 lbs	2.5 in	6-wire	20(9)	$629.95
	G-550	110 VAC	24 VDC	67 sec	289 ft-lbs	101 ft-lbs	10.7 sz ft	440 lbs	1-5/8 in	6-wire	7.9 (3.6)	$249.95

* Elevation 101 ft-lbs, Azimuth 44 ft-lbs

SURGE PROTECTORS

SWITCHES

Lightning Protection

PolyPhaser®
CORPORATION

Coaxial Impulse Suppressors

Hermetically-sealed voltage sensitive gas tubes and other components assure that surge voltages and currents will not reach your equipment. See chart below for models.

Rotator Control Protector

Model IS-RCT

Provides protection for rotator controllers, motors, control box and other nearby equipment. **HRO Price $99.95**

In-Line Phone Line Protector

Model IS-SPTL

Multi-stage protection, with large bandwidth and fast response time. For telephone trunk lines–handles standard ring voltages to 105 Vrms. Handles surges up to 36 kA. **HRO Price $57.95**

Power Line Extension Protector

Two-outlet extension cords with master on/off switch and circuit breaker offer added power line protection.

	Length		HRO Price
IS-PLDO-120-15A	15'	120V@15A	$169.95
IS-PLDO-120-20A	6'	120V@20A	$199.95

Grounding Panel

Model CU-SPGP

A .062" thick copper plate mounted on a painted 1/2" plywood backing. Mounting protectors and a single ground point established for station equipment. Comes with concrete anchors, all mounting screws, 10' of 1.5" copper grounding strap, 2 brass sandwich plates, and joint compound. 18" x 12". **HRO Price $69.95**

Model	Mount	Freq. Range MHz	Maximum Power Watts	HRO Price
IS-50 UX-C0	Flange	1.5-400	HF - 2kW; VHF - 375W; UHF - 125W	$61.95
IS-50 UX-C1	Flange	50-700	VHF - 375W; UHF - 125W	$61.95
IS-50 NX-C2	Flange N connect	125-1000	VHF - 375W; UHF low - 125W; 800 MHz - 1GHz - 50W	$61.95
IS-B50 LU-C0	Bulkhead	1.5-400	HF - 2kW; VHF - 375W; UHF - 125W	$64.95
IS-B50 LU-C1	Bulkhead	50-700	VHF - 375W; UHF - 125W	$64.95
IS-B50 LN-C2	Bulkhead N connect	125-1000	VHF - 375W; UHF low - 125W; 800 MHz - 1GHz- 50W	$64.95

Surge Protectors

ALPHA DELTA

Transi-Traps

Model TT3G50

ATT3G50

The **ATT3G50** coaxial surge protector has been designed for the cellular, microwave point-to-point and the broadband wireless industry. These products feature very low loss performance through 3 GHz. Typical loss is 0.1 dB at 1 GHz through 0.5 dB at 3 GHz. This series represents the lowest loss broadband design in the industry. These units are available with a choice of type "N" or "UHF" connectors.

Model	Description	HRO Price
ATT3G 50	200W through 3.0 GHz, Type N	$59.95
ATT3G 50HP	2kW through 3.0 GHz, Type N	$59.95
ATT3G 50U	200W through 500 MHz, UHF	$49.95
ATT3G 50UHP	2kW through 500 MHz, UHF	$49.95

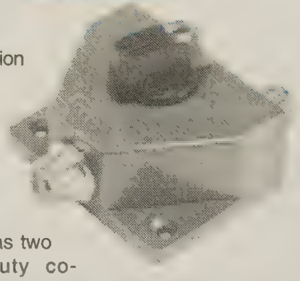
Baluns

CAL-AV

Low-profile baluns mount directly to your yagi boom for easy installation. All are 50 ohms and broad band. From left to right, **EB-3**: 7-30 MHz, 10 kW CCS, AWG 10 wire, DIN-7-16 connector; **EB-1**: 1.8-30 MHz; **EB-2**: "shorty" for tri-banders and LP's, 10-60 MHz. EB-1 and EB-2 are 3 kW, AWG 14 wires, connector mates with PL-259. Wire leads are easy to connect and are color coded for antenna phasing. CAL-AV baluns are vacuum impregnated and sealed for durability and protection from the weather. **HRO Price EB-1 $46.95; EB-2 $42.95; EB-3 $259.95**

Coax Switches

DAIWA



CS-201
Two-position switch.
HRO Price $29.95

Daiwa has two heavy-duty coaxial switches. Both are useable to 500 MHz and the unused positions are grounded. Switches are available at slightly higher prices with type "N" connectors.

ALPHA DELTA

Delta-4

4 Position Switch

This lightning protected 4 position RF coax switch uses the Alpha Delta Arc-Plug cartridge to protect your equipment from electrical surges. The exclusive center "off" (ground) position internally disconnects and grounds all antenna circuits. It has cast housing with constant impedance micro-strip cavity construction. Features a positive detent roller bearing switch drive. Handles full legal power. Delta-4/N for type "N" connectors. The Delta-4 handles frequencies through 500 MHz and the Delta-4/N through 1.3 GHz. **HRO Price $79.95; Type N $89.95**

Delta-2

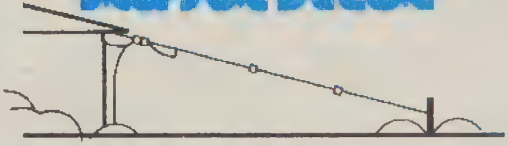
2 Position Switch

This 2 position coax switch is precision lightning surge protected. Has the same constant impedance cavity construction with "center-off" ground as the Delta-4 and a built-in replaceable Arc-plug® cartridge. Order UHF or type "N" connectors for low-loss performance through 1.3 GHz. **HRO Price $49.95; Type N $64.95.**

SWL ANTENNAS

Shortwave Listening

ALPHA DELTA



DX-SWL

The **DX-SWL** is tuned for the most popular SWL bands (13, 16, 18, 19, 21, 25, 31, 41, 49, 90 and 120 meters). It can be used as a multi-band transmit antenna with the appropriate antenna tuner. Length is 60 feet. Requires a single support. Standard coax connects antenna to your radio. Feed point is 50 ohms. SO-239 connection. **HRO Price $90.95**

DX-ULTRA

The multi-element **DX-ULTRA** has extremely low-noise performance. Tapered wing design allows broadband operation. Configure as dipole, inverted vee, or sloper. Covers MW, tropical, SW, government, military, embassy, maritime, aircraft, and commercial frequencies. 80 feet long. Made with ISO-RES inductors and parallel wire elements. Uses the Delta-C center insulator, Delta-CIN end insulators, and 12 gauge solid copper wire with grey PVC insulation. Elements are separated by grey PVC rod. **HRO Price $119.95**

McKay Dymek

DA100E Active Antenna

Frequency Coverage: 50 kHz to 30 MHz, continuous.
Height: 4 feet 8" (142cm).
Output Impedance: Switch select 50, 100, 500 ohms.
Attenuation: Switch selectable 0,10, 20 dB.
Power Required: 110-120 or 220-240 VAC switch selectable, 50-60 Hz, 4 watts, or 12 VDC 0.4 Amp.
Dimensions: Antenna Module: 3.75"W x 4.375"H x 2"D (9.5 x 11 x 5cm).
Power Supply: 6.5"W x 3"H x 7.5"D (16.5 x 7.6 x 19cm).
Shipping weight: 9 lbs (4.1 kg).
HRO Price $189.95

ANTENNA SUPERMARKET

SWL Sloper

The Sloper covers SWL bands from 11-120 meters. Automatic band switching. SO-239 connector for attaching coaxial cable. **HRO Price $89.95**

Eavesdropper™

This high performance trapped dipole for the 11-60 meter SWL bands is 42 feet long. Twin lead or coax models are available. **HRO Price $89.95**

SONY

Active Antenna AN-1

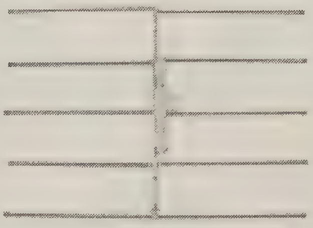
For the SW listener with space problems, the AN-1 has a frequency range of 150 kHz to 30 MHz. Has a low noise FET in the built-in preamp. Built-in attenuator. Requires 6 AA batteries or AC-12 adapter. Antenna can be used inside or outside. Comes with 39 feet of cable. **HRO Price $89.95**

WIDEBAND ANTENNAS

Log Periodic

ELK ANTENNAS

ELK 2m / 440 Dual Band



The Elk 2m / 440 is a dual band log periodic antenna for 144-148 MHz and 440-450 MHz. The antenna features 6.6 dBd gain on 2 meters and 7 dBd on 440 MHz. The SWR is 1:1 in these frequency ranges. The antenna handles 200 watts on 2 meters and 100 watts on 440 MHz. The boom length is 24 inches and the antenna weighs only 1.4 pounds.

The ELK 2m/440 assembles quickly with color coded threaded elements that screw into the color coded boom. Access two bands with just one coax fitting. No duplexer is required. All of the band may be used without retuning. Easily change the polarity of the antenna by twisting the mounting assembly. **HRO Price $74.95**

Wireless Antennas

Wi-Fi / 802.11b Wireless LAN Antennas

NGC offers a wide selection of directional and omnidirectional antennas for Amateur Television, the ISM band, LAN/WAN, data links and wireless internet.

GP-24-3

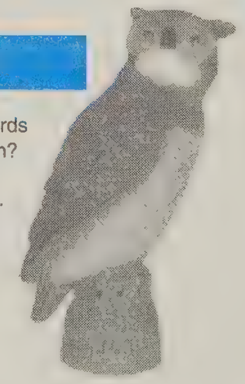
Same as GP-24 but omnidirectional with 3 degree electrical downtilt.
HRO Price: $CALL

NCG

GP-24

ATV/ISM Band
2400-2500 MHz
Omnidirectional
Gain: 15.4 dBi
Height: 5' 10"
Connector: N-Type
HRO Price: $199.95

The Owl

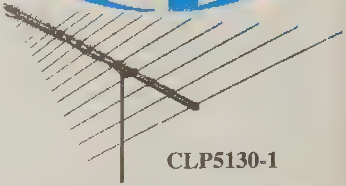


Want to keep those birds off your antenna system?

The OWL is just the trick. Mount this fella on top of your tower and the birds will stay away.

HRO Price $19.95

CREATE



CLP5130-1

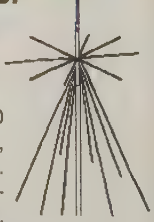
The **CLP5130** antennas are high gain, wide band VHF/UHF log periodic beams for horizontally polarized base station use. Covers amateur bands from 50–1300 MHz, FM broadcasting, scanning, VHF / UHF TV, air band communications, government and business bands.

Forward gain is 10 to 12 dB – 10 to 16 times the gain of a nondirectional discone type antenna. The VSWR is less than 2.0:1 across the band. The high-quality aluminum antennas have a boom design that allows movement of the phasing line. Distortions in the vertical and horizontal planes are minimized and element adjustment is not necessary. The boom-to-mast bracket is made of a lightweight and rugged magnesium alloy.

	CLP 5130-1	CLP 5130-2
Frequency	50-1300 MHz	108-1300 MHz
No. Elements	23	19
Power PEP	500W	500W
Forward Gain	10-12 dBi	10-12 dBi
Front/Back	15 db	15 db
Longest element	9' 10"	4' 6"
Boom length	5' 9"	4' 6"
HRO Price	$449.95	$319.95

DIAMOND ANTENNA

D-130J Super Wideband Discone



Monitor 25-1300 MHz. Transmit on 50, 144, 430, 1200 MHz. All stainless steel. Input power 200 watts. Impedance: 50 ohms. VSWR: 1.5:1. Length: 1.7 meters. Mounts on 1" to 2" masts. **HRO Price $99.95**

butternut ANTENNAS

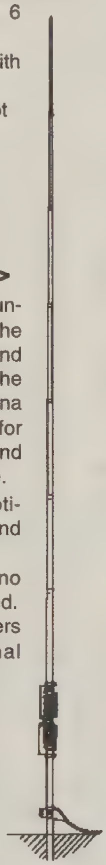
Multi-band HF Verticals

HF9V

More efficient than conventional trapped designs or "halfwave" verticals, the exclusive Butternut Differential Reactance Tuning system allows more of the antenna to be active on each band, for greater bandwidth, lower radiation angle, and superior performance!

- 9 bands, 80 thru 6 meters.
- No-radial operation with CPK counterpoise.
- Highly efficient 26 foot vertical radiator.

HRO Price $399.95



HF2V -->

Are you ready for the sunspot shortage when the action will be on 80 and 40? Be prepared with the HF2V. The entire antenna radiates on both bands for low radiation angle and maximum performance.

- Dual-band optimized for 80 and 40 meters.
- 32 feet tall; no guying required.
- 160 or 30 meters with optional adapters.

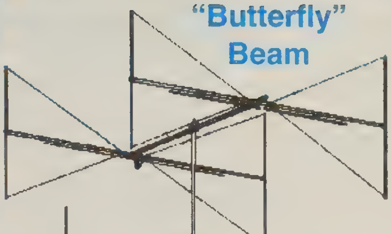
HRO Price $269.95

<-- HF6V

Work the 6 most popular bands– 80, 40, 30, 20, 15 & 10 meters–with a single, highly efficient vertical radiator only 26 feet tall!

- No radial operation with CPK counterpoise.
- Add 160, 17 & 12, or 6 meters with optional adapters.

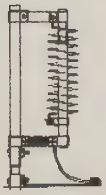
HRO Price $349.95



"Butterfly" Beam

HF5B

Five popular bands in a single lightweight 2 element beam antenna. Ideal where space is limited, the HF5B provides up to 3 dBd on 20, up to 5 dBd on 15, 12, and 10. Light enough to turn with a TV rotator, the HF5B has a 6 foot boom and a wingspan of only 12.5 feet. Weighs only 20 pounds; surtace area is 3 square feet.
HRO Price $399.95



TBR-160S

Vertical Antenna Accesories

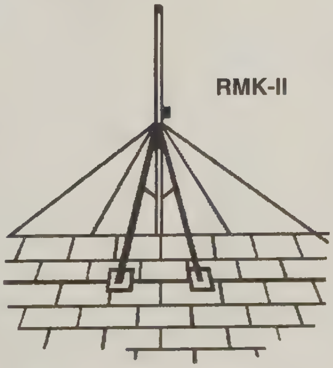
TBR-160S 160 Meter kit for HF9V-X, HF2V or HF6V-X. Not recommended for CPK.
HRO Price $149.95

CPK Counterpoise kit for HF9V-X, HF6V-X. Allows operation with no radial system. **HRO Price $139.95**

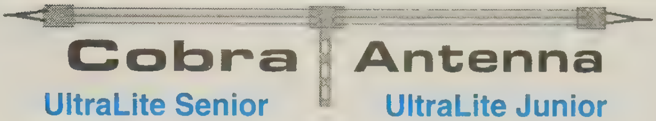
STR-II Resonant radial kit for above ground mounting of Butternut verticals.
HRO Price $129.95

A-17-12 Adapter for 17 and 12 meters for 6 band Butternut verticals. **HRO Price $65.95**

RMK-II-Roof mounting kit. Includes STR-II.
HRO Price $179.95



RMK-II



Cobra Antenna

UltraLite Senior

160-10 Meters, 140 feet
HRO Price $89.95

UltraLite Junior

80-10 Meters, 73 feet
HRO Price $85.95

On its primary and harmonic operating frequencies, the Cobra antenna works identically to a ladder-line fed doublet, but its unique close-spaced multi-wire element also introduces two added resonant responses below the antenna's fundamental operating frequency. These responses extend frequency coverage far beyond that of a conventional doublet or G5RV. For example, the 140-foot (80-meter) Cobra also resonates near 2.8 MHz and on 160 meters. Similarly, the 73-foot (40-meter) Cobra also covers 60 and 75 Meters.

UltraLite Cobras are designed and engineered to survive harsh winter climates. Weighing only four pounds including the feedline, they install quickly and pull up higher with far less stress on tree branches and support lines. The black marine-grade ABS insulators won't deteriorate in sun or fracture in cold. All hardware is stainless. All wire is uV stable and pull-tested for strength. UltraLites come pre-assembled and ready to install with 100-feet of rugged copper-weld ladder line attached.

All Cobras require a tuner. In most installations, the auto-tuner built into your transceiver should provide sufficient tuning range. Because the Cobra presents a balanced load, we recommend installing a 4:1 current-style balun at the station end of the feedline (many external tuners provide a built-in balun).

Tribanders

Force 12

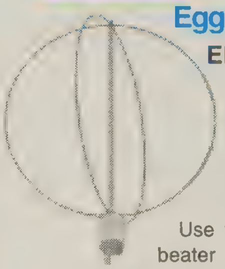
Classic Tribanders C Series

Force 12 has a fine lineup of antennas covering the 20-15-10 bands with a single feedline. All are trapless and are acclaimed as outperforming all the various trapped antennas.

C-3	20-10 m, 18' boom.
C-3S	20-10 m, 12' boom.
C-3SL	20-15-10 m (3-element 20, 3-element 15, 4-element 10, w/ separate feed- lines for maximum versatility).
C-4	40-10 m, 18' boom.
C-4S	40-10 m, 12' boom.
C-4XL	40-10 m, 30' boom (with 2 elements on 40).
C-4SXL	40-10 m, 23' boom (with 2 elements on 40).

Call HRO for Quotes

M²

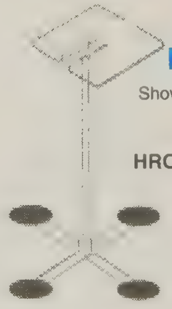


2m Eggbeater

EB-144 / RK2M

HRO Price $209.95

Use the Eggbeater for fixed and mobile operations. It produces smooth omnidirectional horizontal polarity at the horizon. Above the horizon, the pattern transforms to right hand circular off the top making it a natural for OSCAR use. No rotation or steering is required.



2m HO Loop

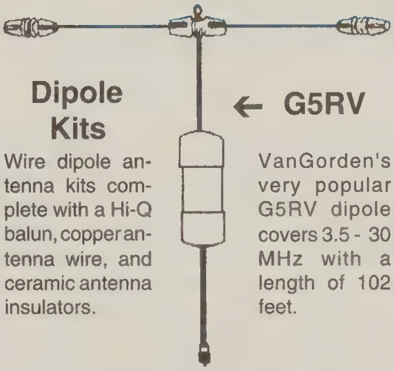
Shown with optional mag mount

HRO Price $52.95
Colored versions higher

Nothing satisfies more than our 2m "HO" Loop for horizontal performance. This easily adjustable antenna has plenty of bandwidth. It will handle a KW plus. Stack antennas for more gain. The Loop has durable construction for "tree bashers." Have no weather worries with the bright aluminum standard finish or an anodized finish in gold, black, turquoise or green.

HF / VHF / UHF ANTENNAS

VAN GORDEN



Dipole Kits

Wire dipole antenna kits complete with a Hi-Q balun, copper antenna wire, and ceramic antenna insulators.

← G5RV

VanGorden's very popular G5RV dipole covers 3.5 - 30 MHz with a length of 102 feet.

Standard Length

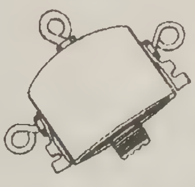
Models D-10 for 10 meters, D-15 for 15 m, D-20 for 20 m, D-40 for 40 m, and D-80 for 75 / 80 m.

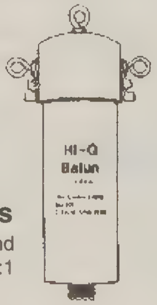
Shortened

Models SD-40 for 40 m and SD-80 for 75 / 80 m.

Parallel

These models are made of multiple dipoles connected at the center balun and fed at this one point. Model PD-8010 is for 10-80 meters, PD-8040 is for 40 and 80 m, PD-4010 is for 10-40 m, and PD-4020 is for 20-40 m.





Baluns / Insulators

Egg insulators. Center and end insulators. 1:1 and 4:1 Baluns.

Van Gorden Antennas

Model	Type	Band	Length ft (m)	Power PEP	Wire Size	HRO Price
D-10	Standard Dipole	10	16(4.9)	2KW	#14	$26.95
D-15	Standard Dipole	15	22(6.7)	2KW	#14	$27.95
D-20	Standard Dipole	20	33 (9.9)	2KW	#14	$28.95
D-40	Standard Dipole	15/40	66 (19.8)	2KW	#14	$29.95
D-80	Standard Dipole	75/80	130 (39)	2KW	#14	$32.95
All-Bander	Standard Dipole	160-10 *	134 (40.8)	2KW	#14	$29.95
Shorty	Dipole	160-10 *	70(21)	2KW	#14	$44.95
SD-40	Shortened Dipole	40	45 (13.5)	2KW	#14	$34.95
SD-80	Shortened Dipole	75/80	90 (27)	2KW	#14	$36.95
PD-8010	Parallel Dipole	10 to 80	130 (39)	2KW	#14	$44.95
PD-8040	Parallel Dipole	15/40/80	130 (39)	2KW	#14	$40.95
PD-4010	Parallel Dipole	10/20/15/40	66 (19.8)	2KW	#14	$38.95
PD-4020	Parallel Dipole	20, 15/40	66 (19.8)	2KW	#14	$34.95
G5RV	Dipole	3.5-30 MHz	102(31)	2KW	#14	$49.95

* Antenna tuner required

YAESU

HF Dipole Antenna

YA-30 — $249.95 – HRO Price

This 83-foot broadband dipole antenna provides optimum performance over the frequency range 1.8-30 MHz. Usual requirements for an antenna tuner between the rig and antenna are eliminated by the unique broadband design. Handles 150 watts at an SWR of less than 1.9:1 on the amateur bands. Preassembled and pretuned. Can be installed as a horizontal flat-top, inverted-V, or sloper. 100 feet of RG-8X with PL-259 included.

HF / VHF / UHF Mobile Antenna

ATAS-120 — $299.95 – HRO Price

The ATAS-120 provides HF/ VHF/ UHF coverage with automatic motorized tuning. Controlled from the transceiver, it adjusts the radiator length for best SWR. **Compatible with Yaesu's FT-100, FT-847, FT-857, and FT-897.**

HF / VHF / UHF Portable Field Antenna

ATAS-25 — $219.95 – HRO Price

The ATAS-25 has radiating elements covering amateur bands 10-40m, 6m, 2m, and 70cm. Mounts to a standard camera tripod (not included). Uses a manual tuning system. Dual frequency operation possible with a duplexer (not included). Antenna collapses to less than two feet to carry; expands to 7.2 foot maximum height. Weight is 2.05 pounds.

Maldol HVU-8

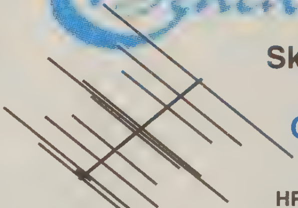
Ultra-Compact Vertical 8-Band HF / 2m / 70 cm Base Antenna

HRO Price $299.95

At only half the height and weight of traditional HF vertical antennas, the HVU-8 includes 2m and 70cm. It is easily configured and installed in confined and restricted spaces such as apartment balconies, or for temporary use. Each HF band and 6m has an independently tuned radiator and radial system while the main antenna mast is tuned for constant operation on 2m / 70 cm.

- HF and 6m: 1/4 wave.
- 2m: 1/2 wave 2.15dBi gain.
- 70cm: two 5/8 waves in phase, 5.5 dBi gain.
- Impedance: 50 Ohm.
- Max power HF: 200 W SSB; 6m-70 cm: 150 W FM.
- Height: 8 ft 6 inches; Weight: 5 lbs 7 ozs.

Bencher inc



Skyhawk 3X10 The Next Generation HF Yagi

HRO Price $1099.95

SKYHAWK

The Bencher Skyhawk antenna is a major step forward for serious HF operators. It is not just another trapped tribander. The Skyhawk features 10 elements on a 23 foot boom, with three full-sized yagis sharing a common feedline and a common boom. There are three elements on 20 meters, three on 15 meters and four on 10 m. All elements are full-sized with no lossy traps and driven directly.

Special features of the Skyhawk include wide bandwidth, excellent F/B ratios, superb gain, and low weight. With boom and element wind compensators, there is zero rotational mast torque and 90 mph wind survival. All materials are corrosion and UV resistant. Stainless steel blind rivets are used for element assembly.

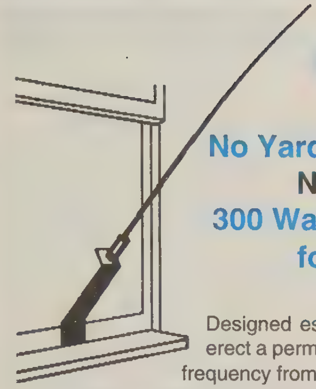
Custom aluminum extrusions make assembly a snap and assure longevity. A new design of boom to mast bracket makes installation the easiest ever. Heavy wall boom construction means that no boom truss cable is required, making it easier to stack antennas for other bands. A Bencher P5 balun is included.

The wind load is 8.5 sq. ft, turning radius 22 feet, wind survival is 90 mph with no ice, 2" boom, 50 ohm impedance and a maximum power rating of 5KW.

Band Specifications

Band	Effective Boom Length	VSWR	F / B	Gain
20	23	<1.4:1	>20 dB	>7 dBi
15	15'6"	<1.3:1	>16 dB	>7 dBi
10	16'9"	<1.6:1	>14 dB	>7.7 dBi

BASE & PORTABLE ANTENNAS



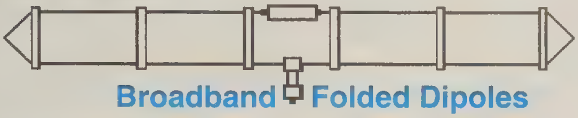
No Yard? Deed Restricted?

NO PROBLEM!

300 Watt Portable Antenna for 2-40 Meters

AP-10A

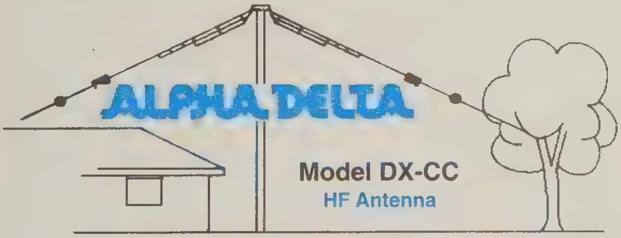
Designed especially for people who cannot erect a permanent antenna. Easily tunes any frequency from 10-40 meters. Also operates on 2 and 6 meters. Mounts to a window, table, balcony, etc. Base loaded unit includes telescopic whip, window mount bracket, single coil with flylead/clip, insulated counterpoise wire, 10 ft of coax, hardware. Stainless steel whip collapses to 23" for easy transport. **HRO Price $84.95**



Broadband Folded Dipoles

Barker & Williamson's unique patented design brings you true continuous coverage of 1.8 - 30 MHz in an antenna only 90 feet in length! The SWR on these very low noise dipoles is less than 2:1 from 1.8-30 MHz and 3:1 on 6 m (tuner required). Install as flat, inverted vee, or sloper. Antennas come completely assembled. They are constructed of #14 stranded wire, copperweld. 2KW PEP SSB / CW ICAS. 50 Ohm input with SO-239.

Model	MHz	Feet	Wire	HRO Price
BWD-20	14-30	20	Copperweld	$199.95
BWD-45	7-30	45	Copperweld	$209.95
BWD-65	4-30	65	Copperweld	$209.95
BWD-90	1.8-30	90	Copperweld	$199.95



Model DX-CC
HF Antenna

HF Antennas for Limited Space

All the limited space antennas use stainless steel hardware where required, are fully assembled, and are manufacturered to withstand severe weather. SO-239 connectors.

Model DX-B is a single wire, high performance quarter-wave sloper antenna for 160, 80, 40 & 30 meters. For limited space, the antenna requires only 60 feet for installation. Use with a wide range antenna tuner. Pre-assembled and pre-tuned. Has stainless steel hardware, 12 gauge insulated solid copper wire and the Alpha Delta "ISO-RES" RF choke coils, 50 ohm coax feed. Full legal power. **HRO Price $69.95**

Model DX-CC: A no trap 80-40-20-15-10 meter dipole. 82' long. **HRO Price $109.95**

Model DX-DD: A no trap 80-40 meter dipole. 82' long. **HRO Price $89.95**

Model DX-EE: A no trap 40-20-15-10 meter dipole. Only 40' long. **HRO Price $99.95**

Model DX-A: A quarter wave twin sloper for 160-80-40 meters. One leg is 67' and the other 55'. Installs as an inverted-V. **HRO Price $59.95**

Ventenna™

Can you spot the antenna?

Neither can your neighbors.

At last a solution to antenna restrictions! The Ventenna™ quickly slips over an existing vent pipe and your signal really gets out! This nearly invisible antenna is one of the most rugged made.

The **VT-27** dual-band is for 2 m and 440 MHz. Single band models are for 2 m, 220 MHz and 440 MHz.

Model	Bands	HRO Price
VT-14	2 meters	**$63.95**
VT-22	220 MHz	**$63.95**
VT-44	440 MHz	**$63.95**
VT-27	2 meter & 440 MHz	**$89.95**

Portable HF Vertical Antenna

HFp — $139.95
HRO Price

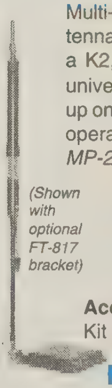
The HFp from Ventenna is a portable HF vertical antenna that covers 6.5 MHz to 30 MHz. (An 80m option will soon be available). It will handle 200 watts and stands only 10.5 feet when fully assembled. The package weighs only 2.2 pounds.

Typical band width without adjustments are 200 kHz on 40 m, 400 kHz on 20 m, greater than 1 MHz on 10 m, and the full band on 30m, 17m, 15m and 12 m. The antenna includes elements for all bands, mounting base, ground radials on easy-to-use spools, and guy cable on an easy-to-use spool.

SUPERANTENNAS

by Vern W6MMA

Multi-band HF screwdriver–portable antennas fit into your briefcase along with a K2, FT-817 or other small rig. The universal mount allows them to be set up on almost any object at any angle to operate QRP to 150 watts. *Note: The MP-2 will not operate on 80m.*



(Shown with optional FT-817 bracket)

Portable HF Motorized Antenna

7 MHz - 450 MHz

MP-2: $225.95 – HRO Price

Accessories: Tripod $19.95; Mobile Kit $15.00; FT-817 Bracket $19.95

(FT-817 shown for illustration)

Portable HF Antenna

7 MHz - 450 MHz
3.5-4 MHz with optional coil

MP-1: $149.95 – HRO Price

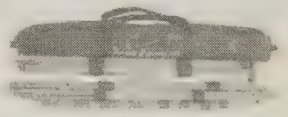
Accessories: 80 Meter Coil $25.00; Tripod $19.95; Mobile Kit $15.00; FT-817 Bracket $19.95; Motor Drive Retro Kit $75.95; Mobile Kit $15.00

(Shown with universal Mounting Bracket Assembly)

QRP Field Yagi

6 / 10 / 12 / 17 / 20 m Yagi

YP-2: $359.95 – HRO Price



The 2-element, driver-reflector QRP Field Yagi covers 10 and 6 meters with full length, widely-spaced elements for very wide band coverage. On 12 and 15 meters, the elements are loaded at specific points with 3.5 pH coils with an estimated Q of 200. On 17 and 20 meters, the elements are loaded at specific points with 7.0 pH coils, again with an estimated Q of 200. The antenna will fit into the side-to-side space of a 10-meter Yagi. It is light weight and fits into a 36" long carrying case for easy transport. It requires no matching network.

Screwdriver Controller

SC-120

3.5 MHz to 28 MHz

$295.00 – HRO Price

Quick tune your screwdriver antenna automatically. The SDC-120 automatically tunes 8 bands from 3.5 MHz to 28 MHz. Memory presets dial in the exact position every time. The unit operates with Icom, Yaesu and Kenwood transceivers. The SDC-120 auto tunes utilizing Icom or Yaesu's built-in frequency counters. SWR monitoring and manual tuning are also available.

The optional **Software IC-120** PC application program (software works on Windows 95 or later) will control the SC-120 from your PC. Provided on "Super Drive" 1.4 floppy disk. Includes interface cable that connects to the PC COM port. **HRO Price $35.00**

CUSHCRAFT
COMMUNICATIONS ANTENNAS

World Ranger Series

Multi-Band Beams

A3S Tri-Band

The four-element A4S with stainless steel hardware outperforms other beams in day-to-day operation and the tough competition of contests. It has achieved the success of DXCC in only two days. The combination of precisely tuned traps with excellent spacing to element length ratios make the A4S a proven winner. Designed for easy assembly, the A4S is light weight, built to last and has a clean profile to reduce wind load. The A3S, with all stainless steel hardware, is the most popular three element, three-band beam available today. It has plenty of gain and good front-to-back ratio. The A3S can be mounted on a lightweight tower and rotator in a very small space. Rugged design features insure many years of trouble-free operation.

A3S	10, 15, 20 m, 3-element
A4S	10, 15, 20 m, 4-element

HF Director

The **MA-5B** multiband HF antenna provides 5 band directivity in a package small enough to be mounted on a tripod. Covers 10,12,17,17 and 20 m with one coaxial feed point. Turn with lightweight TV rotator.

VHF-UHF Tri-Band Yagi

The **A627013S** gives those with limited tower or mast space a directional antenna for the 3 most popular bands, 6m, 2m and 70cm. Operating on a single boom, many problems of degraded antenna performance have been solved.

VHF / UHF Boomers

The Cushcraft Boomer Series of high performance Yagis has been the industry standard for more than two decades. They have established new VHF / UHF distance records and their computer-based design has become the favorite choice for SSB, FM and packet. All boomers have stainless steel hardware.

13B2
2m Boomer

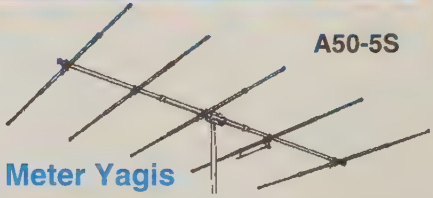
The **13B2** is the best choice for performance across the 2 meter band. Its 15' boom makes it the most popular 2 meter Yagi worldwide.

Big Thunder Tribander

Performance for 10/15/20 m DX

The X7 triband Yagi sets new standards in radiating performance and mechanical reliability. Computer modeling technology has created a superior electrical design with elegant mechanical hardware and assembly techniques. The yagi is designed for 100+ MPH wind survival with a 1.25 safety factor. Traps were eliminated from the driven elements and reflectors using 4L log cell design. Traps on the lower current directors increase gain and sharpen pattern.

VHF / UHF Yagis



A50-5S

6 Meter Yagis

Enjoy the new excitement of the 6 meter band with an S-series yagi. Computer aided modeling and stainless steel hardware were used by Cushcraft to optimize the performance of our popular 6 meter yagis.

A50-3S	3 element	50-54 MHz	6' boom
A50-5S	5 element	50-54 MHz	12' boom
A50-6S	6 element	50-54 MHz	20' boom

2m / 70cm Dual Band

Increase your range by selecting one of our Cushcraft dual band Yagis. Direct more of your output power when transmitting while reducing interference and increasing signal strength when receiving. Select the antenna for your station depending on your distance requirments.

A270-6S	144-148 / 430-450 Mhz 6 element 2.8' boom 7.8 dB
A270-10S	144-148 / 430-450 MHZ 10 element 6.2' boom 10 dB

Ringo II Base Antennas

Ringo Ranger II antennas have more gain, less wind load, and better mechanical strength than most other antennas. You'll find FM repeater or simplex and packet operation more satisfying with this amazing antenna. Three 5/8 wave radiating elements and an adjustable 1/8 wave phasing stub give 7 dB gain over a 1/4 wave whip. The antenna has RF decoupling radials and is DC grounded for lightning protection.

ARX-2B	135-160 MHz	14' high
ARX-220B	222-225 MHz	9.3' high
ARX-450B	435-450 MHz	4.9' high

HF Vertical

MA5V

HF Mini Vertical

The MA5V mini-vertical for 10 through 20 meter amateur bands weighs only 6.5 pounds and is 14.7 feet tall. Power rating: 250 watts SSB.

MA6V

Like the MA5V with 6 meters added.

R8

8 Band Vertical

The R8 multiband vertical covers eight bands: 6, 10, 12, 15, 17, 30 & 40 meters. Cushcraft had a major breakthrough when they developed this HF multiband vertical antenna specifically for use with a tuner and amplifier. The R8 is the first multiband vertical designed for the rigors of contemporary operating conditions. Although best operated within it's 2.0:1 VSWR bandwidth, it can sustain a 3.0:1 VSWR mismatch at full power for typical operating intervals. Now the ham can take full advantage of the versatility of a tuner used in conjunction with a multiband HF vertical. The low angle of radiation gets you through the pile-ups. Automatic frequency selection lets you use the antenna from your apartment, condo, or motorhome.

R6000

20 - 6 Meter Vertical

The R6000 is a 6 through 20 meter, no ground radial antenna and includes many of the R8 features. There are no traps on 6, 10 and 15 meters. Typical gain is 3 dBi and handles 1500 watts.

NEW! MA8040V

80/40 Meter Vertical

This is a compact self-supporting HF vertical for 40 and 80 meters. Only 22 feet tall, it weighs less than 9 pounds. Handles maximum legal. Power radial kit included.

Cushcraft HF Antennas

Model	Bands	Ele	Fwd Gain dBi	Max F/B dB	Min SWR	Boom Length		Boom Diameter		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight		HRO Price
						FT	M	IN	CM	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg	
X7	20 15 10 meters	7	12.5 20m 13.0 15m	30	1.1:1	18	5.5	2.5	6.4	37.2	11.3	20	6.1	2 1/2	6.4	7.9	0.73	60	27	$799.95
MA-5B	10 12 15 17 20 meters	3	5.3 10m 1.0 12 m 4.8 15m 1.0 17m 3.6 20m	22	1.2:1	7.3	2.2	1.5	3.8	17.5	5.3	8.8	2.7	1 1/2	3.8	3.22	0.3	26.5	12	$369.95
MA-5V	10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95	$229.95
MA-6V	6, 10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95	$299.95
R6000	20 - 10 + 6 meters	1	3		<1.2:1					19	8.7			1 3/4	4.4	1.5	0.14	12.5	5.6	$319.95
R8	40 30 20 17 15 12 10 6m	1	3		<1.3:1					28	7.3							23	10.5	$449.95
A3S	20 15 10 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	27.8	8.5	15.5	4.7	2	5.1	4.4	0.41	30	13.6	$429.95
A743 Kit	40m for A3				<1.2:1					35	10.7	15.5	4.7	2	5.1	0.06	0.06	7	3.2	$149.95
A3WS	17 12 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	25	7.6	14.4	4.4	2	5.1	4.1	0.38	26.5	12	$369.95
A103 Kit	30m for A3WS				<1.2:1					32	9.8	14.4	4.4	2	5.1	0.04	0.04	6	2.7	$179.95
A4S	20 15 10 meters	4	8.9	25	<1.2:1	18	5.5	2	5.1	32	9.8	18.4	5.6	2	5.1	5.5	0.51	38	17.2	$569.95
A744 Kit	40m for A4S				<1.2:1					35	10.7	18.4	5.6	2	5.1	0.3	0.03	7.5	3.4	$149.95
ASL2010	20 17 15 12 10 m	8	6.4	20	<1.2:1	18	5.5	2	5.1	38	11.6	19.3	5.9	2	5.1	10.1	0.94	59	26.7	$749.95
TEN-3	10 meters	3	8	25	<1.2:1	8	2.4	1.4	3.5	18	5.5	9.8	3	2	5.1	2	0.19	10.5	4.8	$199.95
XM240	40 meters	2	6	25	1.1:1	22	6.7	2.5	6.3	43	13.1	24.3	7.4	2.5	6.35	5.5	0.51	59	26.8	$699.95
D3	20 15 10 meters	1			<1.2:1					26	7.9	4	1.2	2	5.1	0.9	0.08	11	5	$249.95
D3W	17 12 meters	1			<1.2:1					34	10.4	5	1.5	2	5.1	0.9	0.08	13	5.9	$299.95
D4	40 20 15 10 meters	1			<1.2:1					36	11	5.5	1.7	2	5.1	1.3	0.12	15.5	7	$349.95
D40	40 meters	1			<1.2:1					42	12.8	6.5	2	2	5.1	1.7	0.16	15	6.8	$329.95
AR-10	10 meters	1	3		<1.2:1					17.6	5.4			1 1/4	3.2	1 2/3	0.16	5	2.3	$79.95
MA8040V	80/40 meters	1	0 80m 2 40m		1.1:1					22	6.7							8.8	4	$229.95

Call for Quotes on Cushcraft Antennas Not Shown

Cushcraft VHF / UHF Antennas

Model	Frequency Coverage	Ele	FWD Gain dBi	Max F/B dB	Conn	Polarization		Boom Length		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight		HRO Price
						Horz	Vert	FT	M	FT	M	FT	M	IN	CM	SQFT	SQMT	lbs	kg	
124-WB	144-148	4	10.2	24	U	Y	Y	4	1.2	3.4	1	4	1.2	2	5.1	0.34	0.03	3.5	1.6	$79.95
13B2	144-148	13	15.8	26	U	Y	Y	15	4.6	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3	$169.95
26B2	144-148	26	18.8	26	U	Y	Y	15	4.6	3.4	1	10.4	3.2	2	5.1	4.8	0.45	25	11.3	$429.95
17B2	144-145	17	18	26	N	Y	N	31	9.4	3.4	1	17.3	5.3	2	5.1	3.9	0.36	18	8.2	$289.95
224-WB	222-225	4	10.2	24	U	Y	Y	3	0.09	2.2	0.7	3	0.9	2	5.1	0.23	0.02	2.5	1.1	$99.95
A50-3S	50-54	3	8	20	U	Y	N	6	1.8	9.8	3	6	1.8	2	5.1	1.8	0.17	8.5	3.9	$99.95
A50-5S	50-54	5	10.5	24	U	Y	N	12	3.7	9.8	3	7.5	2.3	2	5.1	2.7	0.25	13	5.9	$179.95
A50-6S	50-54	6	11.6	26	U	Y	N	20	6.1	9.8	3	11	3.4	2	5.1	4.5	0.42	22	10	$329.95
A148-3S	144-148	3	7.8	25	U	Y	Y	2.8	0.9	3.3	1	2.8	0.9	2	5.1	0.27	0.03	3	1.4	$59.95
A148-10S	144-148	10	13.2	24	U	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	6	2.7	$109.95
A148-20T	144-148	20	13	20	U	Y	Y	10.8	3.3	3.3	1	6.8	2.1	1.5	3.8	1.4	0.13	7.5	3.4	$149.95
A449-6S	440-450	6	10.5	18	U	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1	$56.95
A430-11S	430-440	11		20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	$96.95
A449-11S	440-450	11	13.2	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	$99.95
AR270	144-148	1	3		U		Y			3.75	1.13			2	5.1	0.27	0.03	2	0.9	$89.95
	430-450	1	5.5		U		Y													
AR270B	144-148	1	5.5		U		Y			7.7	2.3			2	5.1	0.47	0.044	2.4	1.09	$99.95
	430-450	1	7.5		U		Y													
A270-6S	144-148	3	7.8	20	U	Y	Y	2.8	0.09	3.4	1	2.8	0.9	2	5.1	0.3	0.03	3.5	1.6	$89.95
	430-450	3	7.8	18	U															
A270-10S	144-148	5	10	20	U	Y	Y	6.2	1.9	3.4	1	6.2	1.9	2	5.1	0.73	0.07	5	2.3	$99.95
	440-450	5	10	18	U															
A627013S	6m,2m,70cm	5	8 6m 10 2m 10 70cm	20	U	Y	Y	8.8	2.56	9.7	3	6.16	1.87	2	5.1	2.52	0.23	9.5	4.3	$189.95
AR-6	50-54		3		U	N	Y			10.1	3.1			1.25	3.2	0.37	0.03	4	1.8	$79.95
AR-2	135-160		3		U	N	Y			3.9	1.2			1.25	3.2	0.21	0.02	2	0.9	$47.95
AR-450	440-460		3		U	N	Y			1.4	0.42			0.75	0.88	0.1	0.01	2	0.8	$39.95
ARX-2	137-160				U	N	Y			9.3	2.8			1.25	3.2	0.33	0.03	2.5	1.1	$49.95
ARX-2B	134-164		7		U	N	Y			14	4.3			1.25	3.2	0.5	0.05	3.5	1.6	$59.95
ARX-220B	220-225		7		U	N	Y			9.3	2.8			1.25	3.2	0.3	0.03	3	1.4	$59.95
ARX-450B	435-450		7		U	N	Y			5	1.5			1	1.5	0.2	0.02	2	0.9	$59.95
ASL-670	6m,2m,70cm																			$239.95

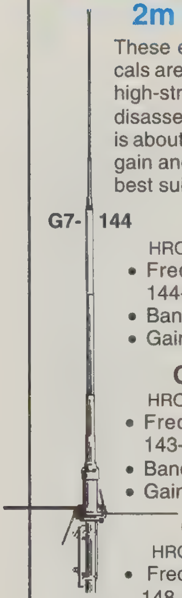
HUSTLER®

Hustler delivers reliability and performance **Beyond Your Expectations!**

VHF / UHF Base Antennas

2m Verticals

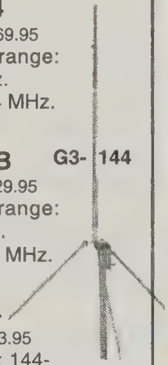
These easy-to-assemble verticals are made of aluminum and high-strength fiberglass. When disassembled the longest part is about 4'. Choose 3, 6, or 7 dB gain and the overall length that best suits your application.



G7-144

HRO Price $169.95

- Frequency range: 144-148 Mhz.
- Bandwidth: 4 MHz.
- Gain: 7 dB.



G6-144B

HRO Price $129.95

- Frequency range: 143-149 Mhz.
- Bandwidth: 6 MHz.
- Gain: 6 dB.

G3-144

HRO Price $53.95

- Freq. Range: 144-148 MHz
- Bandwidth: 4 MHz.
- Gain: 3dB.

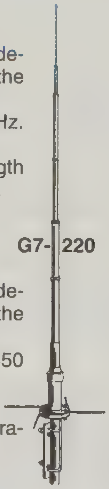
220 & 440 Verticals

G7-220

HRO Price $155.95

The G7-220 is of similar design and construction as the G7-144.

- Freq. Range: 220-225 MHz.
- Bandwidth: 5 MHz.
- Construction: High strength fiberglass and aluminum.
- Gain: 7 dB.



G6-440

HRO Price $169.95

The G6-440 is of similar design and construction as the G6-270R.

- Frequency range: 440-450 MHz.
- Bandwidth: 10 MHz.
- Construction: One piece radome.
- Gain: 6 dB.

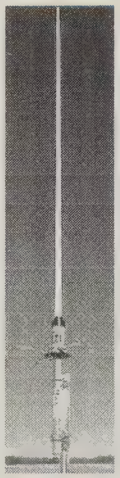
Repeater Antennas

The Spirit Series

Hustler's omnidirectional, collinear design base station antennas are enclosed in a rugged fiberglass radome that will help minimize pattern variations due to high winds or extreme conditions. Models are available for 144, 220, 440, 900 MHz, and 1.2 GHz. The gain will be unity, 3, 6, 9, or 12 dB depending on the frequency.

Call HRO for quotes oncustom frequencies.

2m / 440 MHz Dual Band



G6-270R
Dual band
2 m / 70 cm

HRO Price $199.95

The G6-270R is a combination G6-144B and G6-440. It is factory tuned for quick and easy installation.

- Frequency range: 144-148 MHz / 435-445 MHz.
- Gain: 6 dB.
- Bandwidth: 4 MHz – 2 m /10 MHz – 70cm.
- One piece radome.
- VSWR: < 1.5:1 @ resonance.

HF Base Antennas

HF Multi-band

6-BTV

10, 15, 20, 30, 40, 75/80 m

HRO Price $189.95

5-BTV

10, 15, 20, 40, 75/80 m

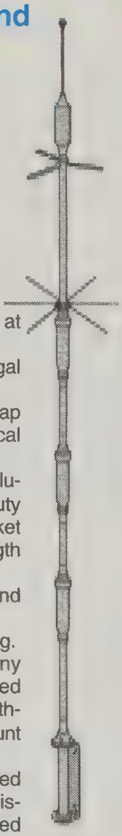
HRO Price $169.95

4-BTV

10, 15, 20, 40 m

HRO Price $139.95

- Broadbanded, low VSWR at band edges.
- Power capability – full legal limit on SSB or CW.
- Solid one-inch fiberglass trap forms for optimum electrical and mechanical stability.
- Heavy wall, high strength aluminum tubing, heavy duty aluminum mounting bracket and low loss, high strength insulators.
- Stainless steel clamps and hardware.
- Easy assembly and tuning.
- Single line feed with any length of 50 ohm coax used as ground mount with or without radials, or elevated mount with radials.
- All the BTV's can be mounted in a piece of PVC and disguised as a flagpole in deed restricted neighborhoods.



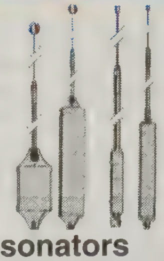
5-BTV

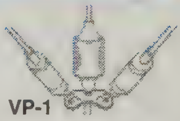
Model 30-MTK

30 meter add on kit for the 4 and 5-BTV

HF Resonators

Customize your HF mobile system with Hustler products. Resonators may be used separately on one of the masts or up to three at a time with the VP-1. Add the QD-2, springs and mounts as needed for your installation.





VP-1

Switch bands automaticly with any three Hustler HF resonators. Adapts any Hustler mast to tri-band operation. $6.95

Hustler HF Resonators

Model	Type	Band	Power SSB	Bandwidth 2:1 SWR	Weight lbs	HRO Price
RM-10	Standard	10 m	400 W	150-250 KHz	0.41	$16.95
RM-11	Standard	11 m	400 W	150-250 KHz	0.41	$16.95
RM-12	Standard	12 m	400 W	90-120 KHz	0.41	$16.95
RM-15	Standard	15 m	400 W	100-150 KHz	0.42	$16.95
RM-17	Standard	17 m	400 W	120-150 KHz	0.44	$23.95
RM-20	Standard	20 m	400 W	80-100 KHz	0.46	$23.95
RM-30	Standard	30 m	400 W	50-60 KHz	0.84	$26.95
RM-40	Standard	40 m	400 W	40-50 KHz	0.84	$26.95
RM-60	Standard	60 m	400 W			$26.95
RM-75	Standard	75 m	400 W	25-30 KHz	1.05	$28.95
RM-80	Standard	80 m	400 W	25-30 KHz	1.05	$28.95
RM-10-S	Super	10 m	1 kW	250-400 KHz	1	$25.95
RM-15-S	Super	15 m	1 kW	150-200 KHz	1.2	$26.95
RM-20-S	Super	20 m	1 kW	100-150 KHz	1.25	$30.95
RM-40-S	Super	40 m	1 kW	50-80 KHz	1.8	$38.95
RM-75-S	Super	75 m	1 kW	50-60 KHz	2.1	$53.95
RM-80-S	Super	80 m	1 kW	50-60 KHz	2.1	$53.95

Hustler Base Antennas

Model	Band	Gain	Connector	Height ft(m)	HRO
G7-144	2m	7 dB	N Female	16.3 (4.6)	$189.95
G6-144B	2m	6 dB	SO-239	9.8 (2.9)	$129.95
G3-144	2m	3 dB	SO-239	7.5 (2.3)	$ 6.95
G7-220	220 MHz	7 dB	N Female	10.2 (3.0)	$155.95
G6-440	440 MHz	6 dB	N Female	7.3 (2.2)	$169.95
G6-270R	2m / 70 cm	6 dB	N Female	7.6 (2.3)	$199.95
6-BTV	10-30-80 m			24.0 (7.2)	$189.95
5-BTV	10 to 80 m			25.0 (7.5)	$149.95
4-BTV	10-40 m			21.4 (8.4)	$139.95

Hustler VHF / UHF Mobile Antennas

Model	Band	Gain	Power	Mount	HRO
LMC-270	2m/70 cm	2.4/4	100	NMO	$31.95
MX-270	2m/70 cm	2.4/4	100	Mag	59.95
LMG-144	2m	3.4	200	NMO	25.95
LMG-440-5	440	5	200	NMO	27.95
LMC-144	2m	3.4	200	NMO	23.95
LMC-440-5	440	5	200	NMO	24.95
LMB-144	2m	3.4	200	NMO	22.95
LMB-440-5	440	5	200	NMO	24.95
BBG-144	2m	3.4	200	NMO	49.95
BBG-440-5	440	5	200	NMO	50.95
BBGT-144	2m	3.4	200	Trunk	52.95
BBGT-440-5	440	5	200	Trunk	55.95
MX-2	2m	3.4	200	Mag	34.95
MX-220	220	3.4	200	Mag	34.95
MX-440	440	5	200	Mag	59.95
MX-2B	2m	3.4	200	Mag	39.95
MX-440B	440	3.4	200	Mag	39.95
SF-2	2m	3.4	100	3/8X24	16.95
SF-220	220	3.4	100	3/8X24	16.95
RX-2	2m	3.4	100	Mag	26.95
RX-220	220	3.4	100	Mag	26.95
RX-440	440	5	100	Mag	26.95
CG-144	2m	5.2	200	3/8X24	34.95
CG-220	220	5.2	200	3/8X24	34.95
CGT-144	2m	5.2	200	Trunk	55.95
CGT-220	220	5.2	200	Trunk	55.95
THF	140-500	Unity	200	Trunk	24.95
UHT-1	140-500	Unity	200	3/4 hole	15.95
UGM	140-500	Unity	25	Mag	23.95

MOBILE ANTENNAS / MOUNTS

VHF / UHF Mobile Antennas

Dual Band

Dual band models for 2m / 440 MHz give you 2.4 dB / 4 dB gain. The antennas are rated at 100 Watts.

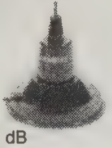
LMC-270
- NMO style coil
- Chrome top
- Coil and whip only

MX-270
- Chrome top.
- NMO style magnetic mount.
- 17 ft RG58/U coax.
- PL-259 connector.

Magnetic Mounts

Models for 2m, 220 and 440 MHz are power rated for 200 Watts. Each has an NMO-style coil and a magnetic mount.

MX-2	144 MHz	3.4 dB gain
MX-220	220 MHz	5.0 dB gain
MX-440	440 MHz	5.0 dB gain



- Chrome top.
- 10 oz magnet.
- 17 ft RG58/U coax.
- PL-259 connector.

MX-2B	144 MHz	3.4 dB
MX-440B	440 MHz	5.0 dB

- Same as above but all black coil.

Collinear

Collinear models for 2m and 220 MHz provide 5.2 dB gain. They are power rated for 200 Watts. All have a swivel ball for vertical positioning.

CG-144	6 MHz bandwidth
CG-220	4 MHz bandwidth

- 3/8"x24 thread
- 5/8 over ˘ wave.

CGT-144	6 MHz bandwidth
CGT-220	4 MHz bandwidth

- Trunk mount base.
- 17 ft RG58/U coax.
- PL-259 connector.

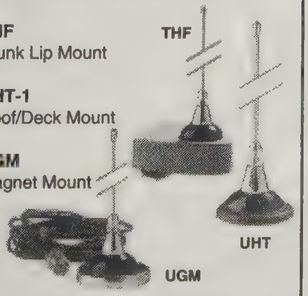
Unity Gain

An antenna to custom trim as needed for VHF or UHF frequencies. Covers 140-500 MHz.

THF
Trunk Lip Mount

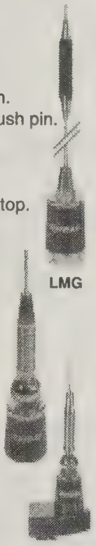
UHT-1
Roof/Deck Mount

UGM
Magnet Mount



Coil and Whip

Models for 2m or 440 MHz are power rated for 200 Watts. NMO-style coil on each requires an NMO mount.



LMG-144	3.4 dB gain
LMG-440-5	5.0 dB gain

- Chrome top and bottom.
- Contact- silver plated push pin.

LMC-144	3.4 dB gain
LMC-440-5	5.0 dB gain

- Black coil with chrome top.

LMB-144	3.4 dB gain
LMB-440-5	5.0 dB gain

- Black coil.

BBG-144	3.4 dB gain
BBG-440-5	5.0 dB gain

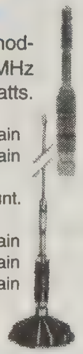
- Chrome top, swivel ball and spring

BBGT-144	3.4 dB gain
BBGT-440-5	5.0 dB gain

- Includes trunk mount.
- 17 ft RG58/U coax.
- PL-259 connector.

5/8 Wave

Base-loaded 5/8 wave models for 2m, 220 and 440 MHz are power rated for 100 Watts.



SF-2	144 MHz	3.4 dB gain
SF-220	220 MHz	3.4 dB gain

- 3/8" x 24 thread.
- Mount to any Hustler mount.

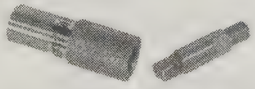
RX-2	144 MHz	3.4 dB gain
RX-220	220 MHz	3.4 dB gain
RX-440	440 MHz	5.0 dB gain

- 3 oz magnetic mount.
- 15 ft RG-58/U coax.
- PL-259 connector.

Accessories

MKR-2 Radial Kit

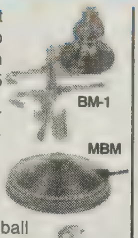
Used to convert RX Series, SF Series, & C6 Series to fix station operation. Contains three radials. Mount can accept any 3/8 x 24 threaded mount.



QD-2 Quick Disconnect

Remove antennas easily with a push and twist release. Compression design of 100% stainless steel. 3/8 x 24 threads. $19.95

Mobile Mounts



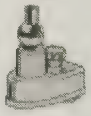
- **BM-1** Bumper mount with stainless steel strap and 1" diameter ball with 3/8 x 24 threads. $23.95
- **MBM** Powerful 5" diameter magnet with 3/8 x 24 threads. 16' of RG58U coax with PL-259 connector. $21.95

- **SSM-1** Heavy duty ball mount with 4" stainless steel spring with copper braided center conductor to prevent detuning. 180 degree adjustable 2" diameter stainless steel ball. Accepts 3/8 x 24 antennas. $49.95
- **SSM-2** Heavy duty 2" diameter stainless steel ball mount. 180 degree adjustable. Accepts 3/8 x 24 antennas. $28.95
- **SSM-3** Heavy duty stainless steel 4" spring with 3/8 x 24 coupling stud. Copper braided center conductor to prevent detun-ing. $26.95

- **C-32** Chrome plated 1" ball mount. Accepts 3/8 x 24 antennas. $12.95
- **C-29** Stainless steel 4" spring. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. $19.95

- **C-30** Chrome plated 4" spring. Copper braided center conductor to prevent detuning. $12.95
- **RSS-2** Stainless steel 3" spring. Used for mobile antenna between resonator and mast. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. $12.95

- **HLM** Trunk lip mount designed for hatch and slanted back vehicles. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. $24.95



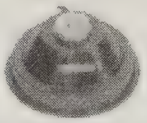
- **HOT** Trunk lip mount with easy off/on with thumb knob. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. $25.95

- **TLM** Trunk lip mount which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. $23.95

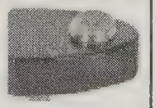
- **RVM** Recreational vehicle mount with heavy duty bracket. Easy antenna removal or lay down with thumb knob. 1" ball accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. $22.95

All mounts below are supplied with 17" RG-58U cable.

CHMB



CMMA



CTMA

Model	Description	HRO Price
CHMA	3/8" Hole mount without connector	$10.95
CHMA-B	3/8" Hole mount w/crimp-on BNC	11.95
CHMA-P	3/8" Hole mount w/crimp-on PL-259	11.95
CHMA-T	3/8" Hole mount w/crimp-on TNC	11.95
CHMA-U	3/8" Hole mount w/crimp-on Mini UHF	11.95
CHMB	3/4" Hole mount without connector	10.95
CHMB-B	3/4" Hole mount w/crimp-on BNC	11.95
CHMB-P	3/4" Hole mount w/crimp-on PL-259	11.95
CHMB-T	3/4" Hole mount w/crimp-on TNC	11.95
CHMB-U	3/4" Hole mount w/crimp-on Mini UHF	11.95
CMMA	NMO 10 oz mag w/solder-on PL-259	17.95
CTMA	Trunk mount without connector	13.95
CTMA-B	Trunk mount w/crimp-On BNC	14.95
CTMA-P	Trunk mount w/crimp-On PL-259	14.95
CTMA-T	Trunk mount w/crimp-On TNC	14.95
CTMA-U	Trunk mount w/crimp-On Mini UHF	14.95

Mobile Masts

Fold-Over Masts

MO-1

Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 15" above base. 3/8 x 24 threaded $33.95

MO-2

Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 27" above base. 3/8 x 24 threaded $33.95

Solid Masts

MO-3

Mobile mast 54" high for bumper, fender or hitch mounting. Solid aluminum with white vinyl coating. 3/8 x 24 threaded $25.95

MO-4

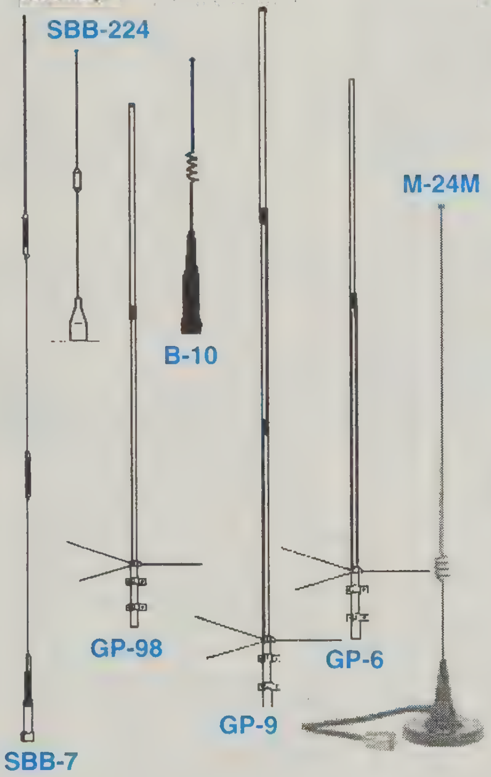
Mobile mast 22" high for trunk or deck mounting. Three retuning tip rods included. 3/8 x 24 threaded $21.95

COMET

Dual- & Tri-band VHF / UHF

Comet developed the Super Linear Converter (SLC) to increase actual gain of dual and triband antennas.

- A complete pre-formed phasing coil and phosphorus copper element eliminates additional components and gain loss.
- The SLC is electrically very efficient, providing a low angle of radiation, directly to the horizon.
- Comet sectional antennas use ABS (Transparent to RF) connecting joints for the finest pattern and easiest assembly.

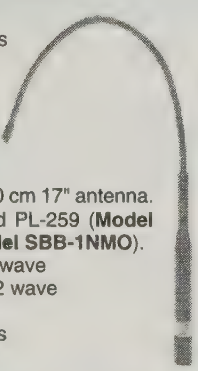


Dual-Band Mag Mount Antenna

Economical black anodized 2m / 440 MHz antenna is 19.5" tall and comes with 13 feet of RG-58/U coax and either a gold-plated PL-259 (**Model M-24M**) or BNC connector (**Model M-24B**) soldered on.

Gain:	146 MHz	1.7 dBi 3/8 wave
	446 MHz	4.1 dBi 1/4 + 5/8 wave
Max Power:	80 Watts	
VSWR:	1.5:1 or less	
Impedance:	50 Ohm	
HRO Price	**$39.95**	

Flexible Dual-Band



Convenient, very flexible 2m / 70 cm 17" antenna. Comes with either a gold-plated PL-259 (**Model SBB-1**) or NMO connector (**Model SBB-1NMO**).

Gain:	146 MHz	1.5 dBi 1/4 wave
	446 MHz	2.15 dBi 1/2 wave
Max Power:	60 Watts	
VSWR:	1.5:1 or less	
HRO Price	**$42.95**	

Comet Dual-Band Antennas

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX Wind Speed MPH	HRO Price
Dual Band Base Station Repeater Antennas								
GP-9/GP-9N	2m/70cm	8.5/11.9	200	SO/N	5'11"	16'6"	90	$199.95
GP-6	2m/70cm	6.5/9.0	200	SO-239	3'8"	10'5"	90	$149.95
GP-3	2m/70cm	4.5/7.2	200	SO-239	2'12"	5'11"	112	$99.95
Dual Band Mobile Antennas - All Black Anodized								
SBB-7/SBB-7NMO	2m/70cm	4.5/7.0	70	PL/NMO	–	4'7"	–	$79.95
SBB-5/SBB-5NMO	2m/70cm	3.0/5.5	120	PL/NMO	–	3'2"	–	$58.95
SBB-2/SBB-2NMO	2m/70cm	2.15/3.8	100	PL/NMO	–	20"	–	$42.95
B-10/B10NMO	2m/70cm	–/2.15	50	PL/NMO	–	12"	–	$42.95
Dualband Fold-over Mobile Antennas								
C767/C767NMO	2m/70cm	3.5/6.0	80	PL-259/NMO	–	3'2"	–	$64.95
C757/C757NMO	2m/70cm	2.15/5.5	80	PL-259/NMO	–	3'4"	–	$59.95
Dualband Mobile Antennas								
AX-50	2m/70cm	0/5.0	60	PL-259	–	21"	–	$49.95
AX-75	2m/70cm	3.2/5.7	60	PL-259	–	2'6"	–	$59.95
AX-95	2m/70cm	3.3/5.8	60	PL-259	–	3'2"	–	$66.95

Comet Tri-Band Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	WGT Lbs' oz"	LEN FT' In"	Max Wind Speed MPH	HRO Price
TrBand Base Station Repeater Antennas								
GP-15	6m/2m/70cm	3/6.2/8.6	200	SO-239	2'15"	7'11"	90	$169.95
GP-98	2m/70cm/23cm	6.5/9.0/13.5	100	N-Female	3'6"	9'4"	90+	$199.95
CX-333	2m/220/70cm	6.5/7.8/9.0	120	SO-239	3'10"	10'2"	112	$179.95
TriBand Mobile Antennas								
SB-15	6m/2m/70cm	2.15/4.5/7.2	120	PL-259	–	4 10"	–	$89 95
SB-97	2m/70cm/23cm	3.0/6.8/9.6	100	N-Male	–	3'3"	–	$84.95
SBB-224	2m/220/70cm	2.15/3.2/5.5	150	PL-259	–	3'1"	–	$78.95
SBB-224NMO	2m/220/70cm	2.15/3.2/5.5	150	NMO	–	3'1"	–	$78.95
HF Antennas								
UHV-6	40/(20*)/(17*)15/ 10/6/2m/70cm	HF 0 dBi 2m 2.15 dBi 70cm 5.5 dBi	120 SSB HF 100W FM 6-70cm	PL-259	MAX 1'4"	MAX 6'4"	–	$159.95
*L-14	Opt 20M coil for UHV-6						–	$31.95
*L-18	Opt 17M coil for UHV-6						–	$29.95
*L-3.5	Opt 75/80MM coil for UHV-6						–	$34.95
HMC-6S	*40/20/15/10/6/2 M/70cm	HF 0 2M./2.15dBi 70cm 5.3dBi	120W SSB HF 150W FM 6/2/70cm					$159.95
HMC-7C	Opt 40MM coil for HMC-6S							$34.95

Comet Single Band and HT Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	LEN FT'In"	HRO Price
Single Band Antennas						
SBB-25/SBB-25NMO	2m	4.1	100	PL-259/NMO	4'8'	$48 95
HT Antennas						
CH-32 MINI Ant	2m/70cm	–	10	BNC	1.75"	$33.95
MH-510	6m/2m/70cm	0/0/3.2	10	SMA	20.75"	$37.95
MH-511	6m/2m/70cm	–	10	SMA	4.25"	$33.95
HT-224	2m/220/70cm	1.3/1.4/1.8	10	SMA	11"	$47.95
MH-610	2m/220/70cm	0/1.8/3.2	10	SMA	14"	$49.95
SMA-501 MINI Ant	2m/70cm	–	10	SMA	1.5"	$29.95
SMA-3	2m/70/23cm	1.2/1.7/3.4		SMA	9.75"	$41.95
SMA-24	2m/70cm	2.15/5.3	20	SMA	17.5	$22.95
BNC-24	2m/70cm		20	BNC	17.5	$22.95
SMA-503	2m/70cm	–	10	SMA	8.5"	$29.95
CH-75	2m/70cm	–/3.2	50	BNC	14.75	$25.95
SH-95	2m/70/23cm	1.5/2/5.5	10	BNC	15"	$34.95

6 Meter Antennas

MODEL	Description	FREQ	GAIN	F/B	Max Pwr Watts	CONN	SWR	LEN FT'In"	HRO Price
CA-52HB4	4 element beam	50-54 MHz	–	19 bD	400 W PEP	SO-239	<1.5:1	10'6 Boom	$119.95
GH-50	Vertical (no radials)	50-54 MHz	2.15	–	60 FM	SO-239	<2.0:1	7'11 Ht	$99.95

Mobile Antennas

UHV-6 40 m - 70 cm

HRO Price $159.95

The UHV-6 is Comet's 3rd generation HF-UHF mobile antenna. Without the HF coils attached, it is a tribander for 6m / 2m / 70 cm. The top of the element has a threaded socket for attaching either the 40 m, 15 m or 10 m coil that is included, making the UHV-6 a quad-band antenna.

- An inexpensive antenna system for the popular HF and VHF/UHF bands.
- Covers 40 / 15 / 10 / 6 / 2m / 70 cm with optional coils for 20 m and 17 m.
- Easy to mount and easily configured to your individual needs.
- Fold-over hinge included.
- GAIN on 2m (2.15 dBi); 70cm (5.5 dBi).

UHV-4 10 / 6 / 2 m / 70 cm

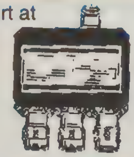
HRO Price $119.95

Developed for the Yaesu FT-8900. The 10m and 6m bands tune independently and will tune for SSM and FM.

Duplexers / Triplexers

(See chart at right)

CF-4160K

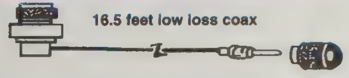


CFX-4310C

Mounts

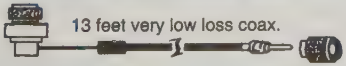
CP-5M
CP-5NMO
CP-5 3/8-24(shown)

These universal mounts use the heavy-duty RS-730 lip bracket. Each includes 5 meters (16'6") of deluxe 2-step coax and an antenna mount connector: gold-plated PL-259 on coax end with detachable barrel for easy installation. 18 inch lead of mini RG-174 coax for easy entry through the weather seal without causing wind noise, water leaks and/or coax damage. Choose the model that has the connector for the antenna you are using.



3D5M Detachable Connector

RG-188 provides easy entry into the vehicle from an exterior mount.



CK-3M5 / CK-5N

Comet High-Power Duplexers and Triplexers

Zinc-alloy, die-cast, twin cavity, low input loss, high-isolation, and high-power. Modernize your station with Comet high-performance antenna products.

MODEL	PORT	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol dB	Mix Conn	Port Conn	HRO Price
CF-416A (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads PL-259 w/leads	$49.95
CF-416C (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	N-Female	PL-259 w/leads N-Male w/leads	$54.95
CF-4160I (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads N-Male w/o leads	$48.95
CF-4160K (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads PL-259 w/o leads	$48.95
CF-416B (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads N-Male w/leads	$49.95
CF-706A (2m/70cm)	LPF HPF	1.3-90MHz 75-470MHz	175 175	350 350	0.5 0.5	40 40	SO-239	PL-259 w/leads PL-259 w/leads	$74.95
CF-530 (6m/125-470)	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	$74.95
CF-530C (6m/125-470)*	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	$74.95
CF-360A (10m/6m)	LPF HPF	1.3-30MHz 50-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	$69.95
CF-706 (2m/6m)	LPF HPF	1.3-56 MHz 75-320 MHz	350 350	600 600	0.4 0.4	40 40	SO-239	PL-259 w/cable PL-259 w/cable	$69.95
CFX-4310C (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/leads N-Male w/leads N-Male w/leads	$79.95
CFX-514 (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.2 0.25 0.3	55 55 55	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	$79.95
CFX-514J (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.15 0.2 0.25	55 55 55	SO-239	SO-239 w/o leads SO-239 w/o leads SO-239 w/o leads	$79.95
CFX-324A (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	$88.95
CFX-324B (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/o leads PL-259 w/o leads PL-259 w/o leads	$85.95

* To run multiple antennas with the Yaesu FT-8900

Comet Mobile Mounting Systems

Comet has a wide variety of mobile mounts. Choose the mount and coax cable assembly that best fits your personal needs. All Comet cables have detachable connectors.

MODEL	DESCRIPTION	HRO Price
	Mounts with Coax Cable Installed	
CP-5M	Universal multi-angle lip mount w/deluxe cable SO-239/Pl259 Conn.	$69.95
CP-5NMO	Same as CP-5M but with NMO/PL-259 Conn.	$69.95
CP-5 3/8-24	Same as CP-5M but with 3/8-24/PL-259 Conn.	$69.95
GR-5M	Deluxe trunk-lip mount w/CK-3M5 Cable, UHF connectors	$67.95
GR-5N	Deluxe trunk-lip mount w/CK-5N Cable, N-Type connectors	$69.95
CM-5M	Standard Hvy-Duty Mag Mt w/RG-58A/U, Coax, UHF Conn, Max Antenna Height 4ft	$24.95
	Mounting Brackets Only, No Coax	
RS-730	Heavy Duty universal lip mount, accepts S)-239 connector	$32.95
PRM-T	Heavy Duty trunk lip mount, accepts SO-239 connector	$33.95
RS-720	Medium Duty universsal lip mount, accepts SO-239 connector	$29.95
RS-720NMO	Medium Duty universsal lip mount, accepts NMO connector	$29.95
RS-520	Light Duty universal lip mount, accepts SO-239 connector	$29.95
EM-B80	Light Duty universal lip mount, accepts SO-239 connector	$25.95
	Coax Cable Assemblies	
CK-3M5	17ft high quality cable inc 12" RG-188 to avoid water leak/cable damage. UHF Conn.	$42.95
CK-3M	Same as CK-3M5 but 9' 9" of deluxe cable assy, UHF Conn.	$35.95
CK-5N	13' 6" of deluxe 2-step cable assy, N- Conn.	$49.95
5D4N	13' 6" low loss (2400MHz) coax cable, N-conn.	$34.95
3D4N	13' 6" low loss (1200MHz) cable assy, N-conn.	$28.95
	Antenna Connector Adapters	
AD-25M	Turns an SO-239 mount into an NMO mount	$14.95
AD-15M	Turns an NMO mount into an SO-239 mount	$17.95
AD-10M	Turns an NMO mount into an N-female mount	$17.95

RADIALL/LARSEN
antenna technologies

Choosing Your Larsen Mobile Antenna

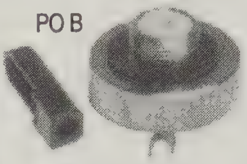
Choose your antenna configuration based on the frequency, base type (e.g., magnetic mount) and thread type (e.g., NMO). Keep in mind that it is necessary to select a base with the same mounting style as the antenna. Typical bases and styles are shown below.

Thread Types

These are examples of each of the thread types. Select one and then select the base.

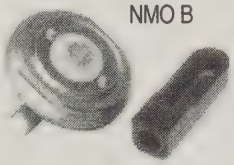
LM B

PO B



NMOHF

NMO B

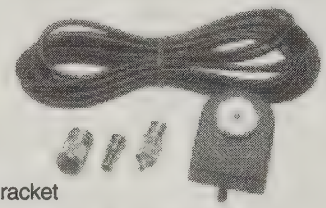


NMOHFTHK

Mount Configurations

In addition to the popular Motorola 3/4" (NMO) mounts shown here, mobile antennas for the Larsen mount (LM) and PO mount (PO) are excellent choices for amateur use. Each of these mounts comes in one of the thread types.

NMO TLP



Mounts:
NMO K premium quality rooftop.
NMO MM mag mount, 90# pull strength.
NMO TLP heavy duty trunk lid.
NMO TMB electropolished trunk gutter bracket
NMOHF for low or high frequencies (pull center pin an insulator for high frequencies)
NMOHFTHK NMO thick mount (surfaces to 1/2" thick) high or low frequencies

NMO TMB

NMO MM R

Scanner Antenna

Tri-Band Antenna NMO150 / 450 / 500

Frequency:
150-165 / 450-470 / 806-940 MHz
Gain: .... 2.14 dBi ± 1dB
Mount: .... NMO
Height: .... 16.5"

This is a great anenna for scanner operation. It is NOT tunable for amateur operation.

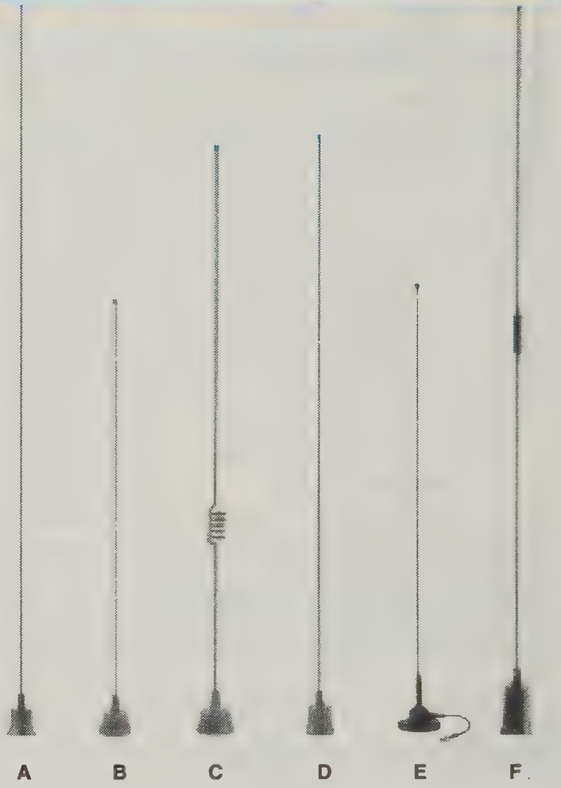
Magnetic Mount

BNC MM BNC

Connectors: BNC on the mag and coax. Coax: RG 58 A/U, 12'

Rubber Ducks On Page 106

NMO Series Antennas



Once the base and thread type are selected, the final step is to choose the antenna. Gain antennas are made of a coil and a whip. Quarter wave antennas are just a whip. All Larsen mobile antennas meet the industry's most demanding specs for electrical efficiency and mechanical durability.

- VSWR at 1.5 to 1 or less.
- Colors: Black coil base; chrome or all black whip.
- 3-year No-Nonsense Warranty.™
- Made in USA

A NMO 150 B (2m)

Frequency: .... 144-174 MHz
Gain: ....3 dB
Electrical: ....5/8 Wave
Height: .... 49"

B NMOQ C

Frequency: .... 144-448 MHz
Gain: ....Unity
Electrical: ....1/4 Wave
Height: .... 22" max.

C NMO 440 B (70cm)

Frequency: .... 440-460 MHz
Gain: ....3 dB
Electrical: .... 5/8 over 1/4
Height: .... 30"

D NMO 220 B (1.25m)

Frequency: .... 220-225 MHz
Gain: ....3 dB
Electrical: ....5/8 Wave
Height: .... 32"

E MS 144 FME

Frequency: .... 144-148 MHz
Gain: ....Unity
Power: ....35 watts
Electrical: ....1/4 Wave
Base: .... 2" Mini Mag
Height: .... 22"
Coax: .... 12' RG 174
Connector: .. FME Universal
(Adapters available in BNC, PL, MPL, SPIN SMA, TNC)
Also available in MS220 FME, MS440 FME.

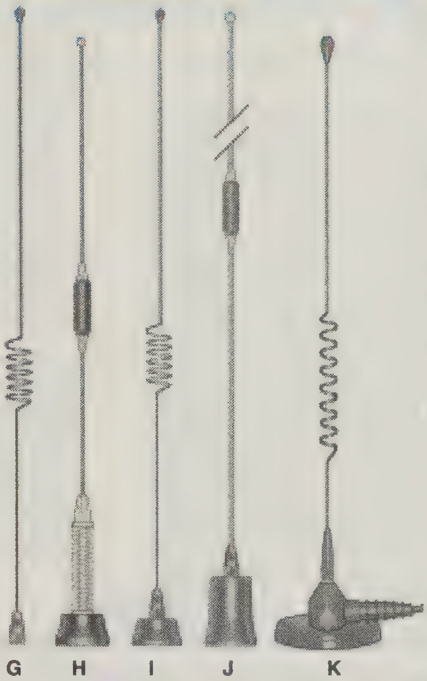
F NMO 2 / 70

Frequency: 144-148MHz
.... 442-448 MHz
Gain: 4 dB VHF; 2.4 dB UHF
Electrical: ..... 5/8 wave VHF
.... Collinear UHF
Height: 2m / 70cm Dual band

Dual-Band Antennas

Larsen dual band antennas provide excellent performance on 2m and 70 cm. Each antenna is factory preset to guarantee optimal performance with no tuning required.

- Range of dual band configurations are available.
- Kulrod copper-plated 17-7 stainless steel rods for greater transmit range.
- Soldered contacts.
- Premium materials and construction provide superior electrical performance and mechanical durability.
- VSWR 1.5:1 or less.
- 3-year No Nonsense Warranty.



Ⓖ LMC 2 / 70 B

Frequency:144-148/440-450 MHz
Gain: .... Unity
Power: .... 100 Watts
Type: VHF: Center load 1/4 wave
........U HF: Center load 3/4 wave
Base: .... Q CONE LMC B
Height: .... 18"

Ⓗ NMO 2 / 70 SH

Frequency:144-148/440-450 MHz
Gain: .... Unity
Power: .... 100 Watts
Type: VHF: Center load 1/4 wave
.........UHF: Center load 3/4 wave
Base: NMO UHF base B w/spring
Height: .... 17"
Whip: .... W NMO 2/70 SH

Ⓘ NMOQ 2 / 70 B

Frequency:144-148/440-450 MHz
Gain: .... Unity
Power: .... 100 Watts
Type:V....... VHF: Center load 1/4 wave
.........UHF: Center load 3/4 wave
Base: .... NMO UHF base B
Height: .... 18"
Whip: .... W NMOQ 2/70 B

Ⓙ NMO 2 / 70 C

Frequency:144-148/440-450 MHz
Gain: .... 2.4/4 dB
Power: .... 100 Watts
Type: .... 5/8 Wave; Collinear
Base: .... NMO 2/70 BCO
Whip: .... W 2/70
Height: .... 36 3/4"

NMO 2 / 70 B

Frequency:144-148/440-450 MHz
Gain: .... 1.6/3.5 dB
Power : .... 200 Watts
Type: .... Center loaded; Collinear
Base: .... NMO 2/70 BCO
Whip: .... W 2/70 B Open coil
Height: .... 36 3/4"

Ⓚ MM 2 / 70 PL

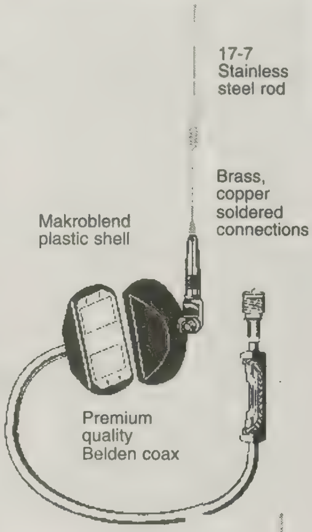
Frequency:144-148/440-450 MHz
Gain: .... Unity
Power: .... 100 watts
Coax: RG58 A/U Dual Shield, 12'
Pull strength: .... 54 lbs.
Type: VHF: Center load 1/4 wave
.........UHF: Center load 3/4 wave
Base: ...... 3" round magnet mount
Connector: .... PL 259 installed
Weight: .... 1 lb.
Height: .... 17"

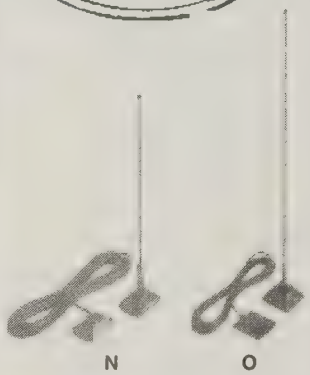
Call Toll-Free for Quotes on Larsen Antenna

On-Glass Antennas

Larsen's advanced design techniques in glass-mount antennas result in superior transmit range plus tremendous mechanical durability. Glass mount performance is nearly identical to rooftop mounts, with no holes to drill. Properly installed on-glass antennas grip for years under demanding conditions, yet are easy to remove and remount..

- Patented low-impedance design is electrically efficient.
- Single-band antennas are precut, 1/2 wave design.
- Transformer outside vehicle.
- Copper plated whips.
- Rated 50 watts output.
- VSWR at 1.5 to 1 or less.
- Less than .5 dB loss through glass vs. rooftop.
- New circuit board technology locks in solid state performance.
- 3M's best on-glass adhesive grip.
- Made in USA with 3 year No-Nonsense Warranty™


17-7 Stainless steel rod
Brass, copper soldered connections
Makroblend plastic shell
Premium quality Belden coax



Dual-Band

The KG 2 / 70 is a VHF half-wave and a UHF collinear. It comes with 14 feet of RG-58/U coax. The antenna installs easily on any flat surface. Remove the whip without tools for car washes or low garages. **HRO Price $84.95**

Ⓛ KG 2/70-CX-PL (Dual)

Frequency: 144-148/442-448 MHz
Gain: .... 2.4 dB VHF; 4.5 UHF
Power: .... 50 Watts
Type: .... 1/2 wave / Collinear
Connector: .... PL 259 (loose)
Height: .... 32-3/4"

Single Band

Ⓜ KG 144 PL (2m)

Frequency: .... 144-160 MHz
Gain: .... 2.4 dB
Type: .... 1/2 Wave
Connector: ..... PL 259 (loose)
Height: .... 45"

Ⓝ KG 440 PL (70cm)

Band: .... 440-460 MHz
Gain: .... 2.4 dB
Type: .... 1/2 Wave
Connector: ..... PL 259 (loose)
Height: .... 11-3/4"

Ⓞ KG 220 PL (1.25m)

Band: .... 220-224 MHz
Gain: .... 2.4 dB
Type: .... 1/2 wave
Connector: ..... PL 259 (loose)
Height: .... 24"

DIAMOND ANTENNA

The Standard by Which All Others are Judged

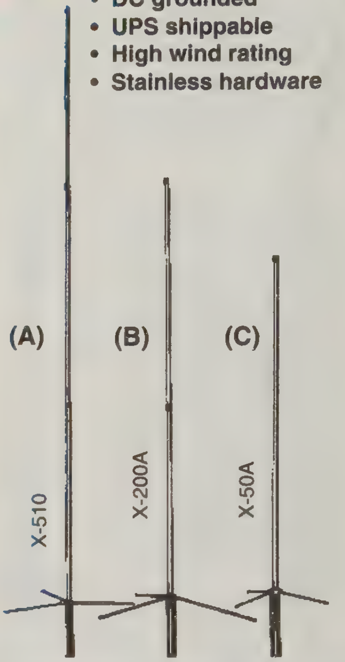
- Wide-band performance
- Highest gain
- Fiberglass radome
- Factory adjusted
- DC grounded
- UPS shippable
- High wind rating
- Stainless hardware

Diamond Base Antennas

All base antennas grounded for lightning protection. Factory adjusted for American amateur bands; no tuning required.

Model	Bands	Gain, dB	Watts	Con. Type	WT (lbs)	Lth (ft)	MPH (no ice)	Fig	HRO Price
A502HB	6m Yag 2 elem.	6.3dBi	400pep		3.75	2.6			$89.95
A504HB	6m Yag 4 elem.	7.7dBi	400pep		7.7	10.7			$149.95
A144S5	2 m Yagi 5 elem.	6.0dBi	100pep		1.4	3.1			$59.95
A430S10	430 Yagi 10 elem.	13dBi	100pep		1.4	3.6			$69.95
A430S15	430 Yagi 15 elem.	14.8dBi	100pep		2.15	7.4			$89.95
CP-22E	2 m	6.5	200	UHF	3	9	90	B	$54.95
DP-GH62 [1]	6 m	6	200	UHF	7	21	80	B	$139.95
F-22A	2 m	6.7	200	UHF	5	10.5	112	B	$99.95
F-23A	2 m	7.8	200	UHF	8	15	90	A	$129.95
G-200	2.4 GHz	11		N		6	135	C	$214.95
U200A	70 cm / 23 cm	8.3/11.7	100	N	3	6	135	C	$119.95
V2000A [1]	6m / 2m / 70cm	2.1/6.2/8.4	150	UHF	4	8.3	110	B	$159.95
X-50A	2 m / 70 cm	4.5/7.2	200	UHF	3	5.6	135	C	$99.95
X-50NA	2 m / 70 cm	4.5/7.2	200	N	3	5.6	135	C	$99.95
X-200A	2 m / 70 cm	6.0/8.0	200	UHF	4	8.3	112	B	$139.95
X-510NA	2 m / 70 cm	8.3/11.7	200	N	5	17.2	90	A	$189.95
X-510NJ	144/430	8.3/11.7	200	N	5	17.2	90	A	$199.95
X-510MA	2 m / 70 cm	8.3/11.7	200	UHF	5	17.2	90	A	$189.95
X-500HNA	2 m / 70 cm	8.3/11.7	200	N	7	17.8	90+	A	$249.95
X-700HNA	2 m / 70 cm	9.3/13.0	200	N	12	24	90	-	$389.95
X-700HA	2 m / 70 cm	9.3/13.0	200	UHF	7	24	90	-	$399.95
X-3200A [2]	2m/1-1/4m/70cm	6.0/7.8/8.0	100@	UHF	4	10	112	B	$209.95
X-6000A	2m / 70 / 23cm	6.5/9.0/10.0	100	N	5	10	112	B	$199.95

1. 52-54 MHz only. DPGH62 is adjustable from 50-54 MHz.
2. 146-148 MHz, 100 watts on 2m, 200 watts on 1-1/4m & 70 cm.

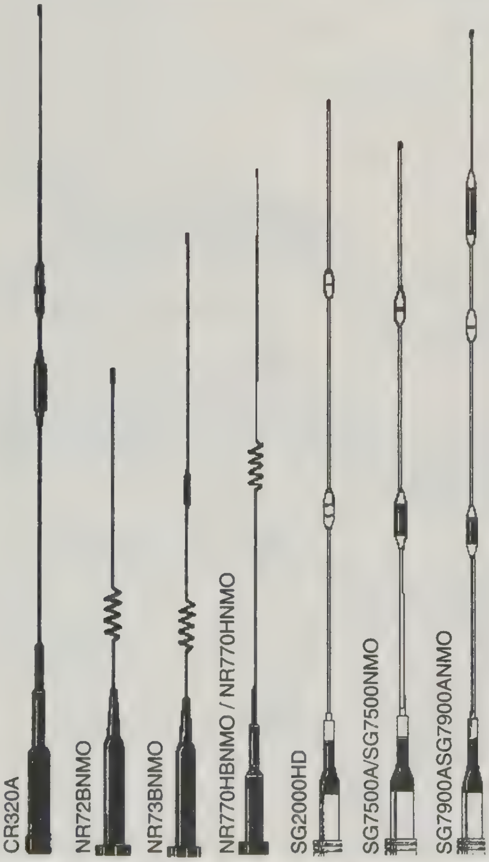


Diamond Mobile Antennas

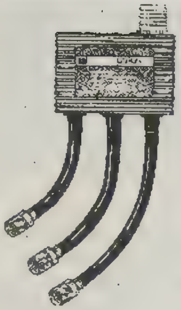
Factory adjusted for American amateur bands, no tuning required unless specified. Mobile antennas have fold-over feature with spring loaded hinge (except NR72BNMO, NR73BNMO, M285, M685, MG200, MR77 and MR77SMA). Magnetic mount not recommended for antennas over 50".

Model	Bands	Gain/dB	Watts	Mount	Lth/in	HRO Price
CR-224A [4]	2 m/1 -1/4 m	5.0/6.0	200	UHF	68	$89.95
CR-320A [#,4,6]	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	UHF	36	$82.95
CR320BNMO	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100@	NMO	36	$89.95
CR-627B [#,4,5]	6m/2m/70cm	2.1/4.5/7.2	150	UHF	60	$99.95
CR-627BNMO [#,4,5]	6m/2m/70cm	2.1/4.5/7.2	150	NMO	60	$99.95
CR8900A [4,7(FM Only)]	10m/6m/2m/70cm	2.15(2m) 5.5(70cm)	60	UHF	50	$109.95
MG200 [7]	2.4 GHz	7	-	N	23.6	$99.95
HF6FX [4,7]	6 m	2.15	250	UHF	44	$69.95
HF50CX [4,7]	6 m	3.5	200	UHF	71	$99.95
M285 [4,8]	2 m	3.4	200	UHF	52.4	$31.95
MR77 [#,7]	2 m/70 cm	2.15/3.4	70	†	20	$39.95
M685 [4,7]	6 m	2.15	200	UHF	52.4	$31.95
MR77SMA [#,7]	2m/70cm	2.15/3.4	70	&	20	$44.95
NR124	23 cm	8.4	100	N	25	$64.95
NR140BNMO	220 MHz	4	159	NMO		$53.95
NR22L [4]	2 m	6.5	100	UHF	96.8	$69.95
NR2000NA	2 m/70 cm/23 cm	3.15/6.3/9.7	100	N	39	$89.95
NR-72BNMO [#,4,7]	2 m/70 cm	2.1/2.1	100	NMO	14	$41.95
NR-73BNMO [#]	2 m/70 cm	2.1/5.3	100	NMO	33	$57.95
NR-770HA	2 m/70 cm	3.0/5.5	200	UHF	40	$56.95
NR-770HNMO	2 m/70 cm	3.0/5.5	200	NMO	41	$56.95
NR-770HB [#]	2 m/70 cm	3.0/5.5	200	UHF	40	$59.95
NR-770HBNMO [#]	2 m/70 cm	3.0/5.5	200	NMO	41	$59.95
NR-770R	2 m/70 cm	3.0/5.5	200	UHF	39	$51.95
NR-7900 [4]	2 m/70 cm	3.7/6.4	300/250	UHF	57	$89.95
SG-M510 [7]	2 m/70 cm	2.15/5.5	100	UHF	37	$59.95
SG-M911 [4,5,7]	6 m/2 m/70 cm	2.15/3/5.8	60	UHF	41	$69.95
SG-2000HD [4]	2 m	5.2	250	UHF	62	$89.95
SG7000A [4,7]	2 m/70 cm	2.1/3.8	100	UHF	18	$73.95
SG7500A	2 m/70 cm	3.5/6.0	150	UHF	41	$79.95
SG7500NMO	2 m/70 cm	3.5/6.0	150	NMO	42	$79.95
SG7900A [4]	2 m/70 cm	5.0/7.6	150	UHF	60	$99.95
SG7900ANMO [4]	2 m/70 cm	5.0/7.6	150	NMO	62	$124.95

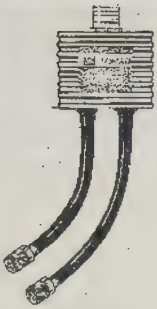
# Black anodized finish †Mag Mt with 13' RG58 Cable w/UHF &Mag Mt w/13' RG58 cable w/SMA
4. Magnetic mounts not recommended. Vehicle ground required. 5. 52-54 MHz only.
6. 100 watts on 1-1/4m; 200 watts on 2m and 70cm. 7. Gain Rated in dBi 8. Tunable from 144-174 MHz.



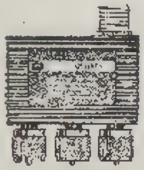
ANTENNAS & ACCESSORIES



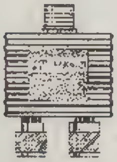
MX324
MX-2000
MX-3000
MX-3000N



MX-72H
MX-72N
MX-62M
MX-610



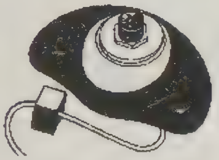
MX-324D



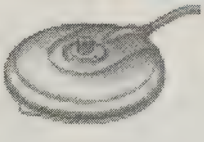
MX-72D
MX-214D

Diamond Duplexers and Triplexers

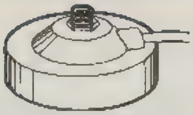
Model	Port	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol. dB	MIX Conn.	Port Conn.	HRO Price
MX62M	LPF HPF	1.6 - 56 76 - 470		200 200	.2 .2	50 50	SO-239	PL-259/12" cable PL-259/12" cable	$74.95
MX-72D	Similar to MX-72H, but Direct Connection								$48.95
MX-72H	LPF HPF	1.6-30 140-150 400-460	400 150 100	400 150 100	.1 .1 .2	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable	$49.95
MX-72N	Similar to MX-72H, but type-N on UHF port								$49.95
MX-214D	LPF HPF	140-150 220-225	150 100	400 250	.3 .4	45 45	SO-239	PL-259/no cable PL-259/no cable	$68.95
MX-324	LPF BPF HPF	1.6-60 220-225 400-550		800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	$99.95
MX-324D	Similar to MX-324, but Direct Connection								$99.95
MX-610	LPF HPF	1.3 - 30 49 - 470		600 500	.2 .25	45 45	SO-239	PL-259/12" cable PL-259/12" cable	$69.95
MX-2000	LPF BPF HPF	1.6-60 110-170 300-950		800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	$84.95
MX-3000	LPF BPF HPF	1.6-160 350-500 850-1300		800 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/12" cable PL-259/12" cable N-male/12" cable	$79.95
MX-3000N	Similar to MX3000, but with Type-N male on BPF connection								$85.75



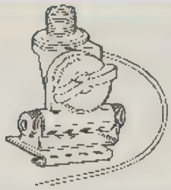
K600M / K600S



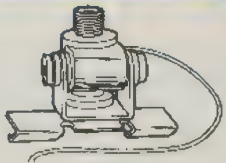
K702M



SPM35 / SPMNMO
DPK4NM-N



K412C / K412CNMO
K412S / K412SNMO

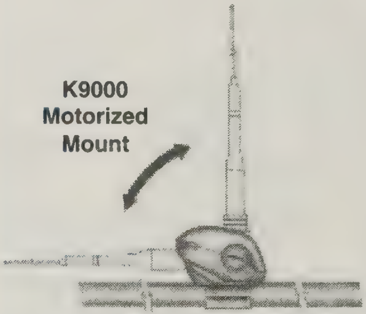


K400C
K400CNMO
K400-3/8C
K400S / K400SNMO

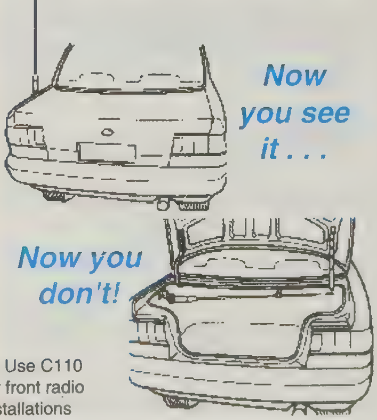
Diamond Mobile Mounts

Model	Description	HRO Price
C101	UHF base 6.5' RG316 Teflon coax w/PL259	$32.95
C101NMO	NMO base 6.5' RG316 Teflon coax w/PL259	$32.95
C104SMA	4' RG58/U Extension cable for PL-259. 90 degree SMA Male & SO-239	$16.95
C105SMA	5' RG58/U Extension cable for C101/C101NMO. 90 degree SMA Male	$16.95
C110BNC	10' RG316 extension cable for C101/C101NMO. Use front radio installations. BNC male	$22.95
C110SMA	10' RG316 extension cable for C101/C101NMO. Use front radio installations. SMA male	$22.95
C110	10' mini-8/RG8X extension cable for C101/C101NMO. Use front radio installations.	$14.95
C211	Combination of C101 and C110. 16.5 feet cable assembly	$44.95
C213	UHF base, 13.5' RG316 Teflon Coax with PL-259	$41.95
C213NMO	NMO base, 13.5' RG316 Teflon Coax with PL-259	$41.95
DPK-4NM-N	Type N Magnet. 13' 5mm coax w/Type-N plug. Good to 1300 MHz.	$45.95
K200KM	Black trunk/hatchback mount with fold over feature. 16.5 feet RG-58A/U w/PL-259	$62.95
K400-3/8C [9]	Special mount for 3/8X24 thread Antenna. 6.5 feet RG316 w/PL-259	$69.95
K400C [9]	Deluxe mount with UHF type base. 6.5 feet RG-316 Teflon coax w/PL-259	$69.95
K400CNMO [9]	Deluxe mount with NMO type base. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K400S	Deluxe mount with UHF type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	$79.95
K400SNMO	Deluxe mount with NMO type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	$79.95
K412C	Trunk/hatchback mount. UHF base, 6.5'Teflon coax w/PL-259. 45" max ant	$59.95
K412CNMO	Trunk/hatchback mount. NMO base, 6.5'Teflon coax w/PL-259. 45" max ant	$59.95
K412S	Trunk/hatchback mount. UHF base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	$69.95
K412SNMO	Trunk/hatchback mount. NMO base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	$69.95
K515S	Deluxe luggage carrier mount. UHF base.13.5 feet RG316 w/SMA(PL259 adapter included)	$69.95
K515SNMO	Deluxe luggage carrier mount. NMO base.13.5 feet RG316 w/SMA (PL259 adapter included)	$69.95
K540KM	Deluxe Mirror/Luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	$59.95
K550KM	Deluxe mini van luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	$69.95
K600M	Tilt angle (0-9 degrees) trunk mount. Black. RG-188 and low loss 7 mm cable.	$57.95
K600S	Tilt angle (0-9 degrees) trunk mount UHF base. 13.5 feet RG316 w/SMA(PL259 adapter included)	$57.95
K601M [9]	UHF hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K601NMO [9]	NMO hideaway trunk mount. 6.5 feet RG316 Teflon coax w/PL-259	$69.95
K702M	Deluxe low-profile magnet/suction mount. 6.5" diameter, 13' RG58 & PL-259	$49.95
K9000LRM	Motorized mount for luggage rack. Use C-series cable assemblies	$104.95
K9000TM	Motorized mount for trunk lid. Use C-series cable assemblies	$104.95
NMO/UHF	NMO to UHF adapter. Polished Chrome. Low VSWR to 500MHz	$12.95
NMO/UHF-B	NMO to UHF adapter. Black Chrome. Low VSWR to 500MHz	$13.95
SPM35	UHF type base on heavy 1.5 lb/4" magnetic, 13' 5mm coax/PL-259.	$39.95
SPMNMO	NMO type base on heavy 1.5 lb/4" magnet, 13' 5mm coax with PL-259	$44.95

K9000
Motorized
Mount



K601M / K601NMO



[9] Use C110 for front radio installations

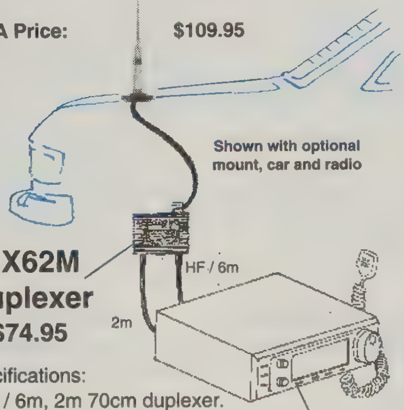
DIAMOND ANTENNA

HV7A Mobile Antenna System

For New HF / VHF Tranceivers (such as: IC706 series, FT100 series and the FT8900R)

The HV7A has 5 band capability: 70cm, 2m, 6m and 2 HF bands through use of Loading Coils. Foldover feature allows for easy access into low overhead buildings.

Bands Supplied:	10m / 6m / 2m / 70cm
Opt. Loading Coils:	40m / 20m / 17m / 15m
Power, P.E.P.:	HF 120w / VHF 200w
Mount Connection:	UHF
Length:	54" (HV7A)
SWR:	1.5:1 nominal
HV7A Price:	**$109.95**


Shown with optional mount, car and radio
HF / 6m
2m

MX62M Duplexer

$74.95

Specifications:

- HF / 6m, 2m 70cm duplexer.
- 1.6–56 MHz LPF
- 76–470 MHz HPF
- (76-120 receive only)
- Watts: 600 P.E.P.
- Loss: .2 dB LPF
  .3 dB HPF
- Isolation: 50 dB

Use with HF/ VHF mobile transceivers such as the IC-706 series, FT-100 or combine 2m and HF rigs.

Optional Loading Coils

HVC7	40m	$42.95
HVC14	20m	$37.95
HVC18	17m	$37.95
HVC21	15m	$37.95

Antennas for Handhelds

RH3 / SRH805 SMA

RH77CA/SRH77CA

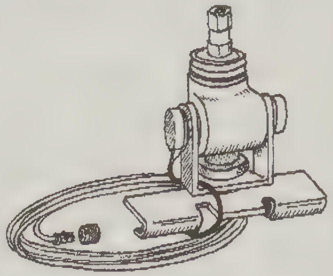
RH951S

RH707

SRH320A

SRH519 / SRH815 SMA

K400-3/8C Special Trunk Mount



for 3/8 x 24 thread Antennas

Here's the ideal mounting system for Outbacker Perth, OB Jr., and other medium weight antennas. A spring is recommended for stiff or heavy antennas.

Power:	350 watts RMS
Cable:	6 1/2' RG316 teflon coax
Connector:	PL-259
Adjustment:	2 axis

K400-3/8C **$69.95**

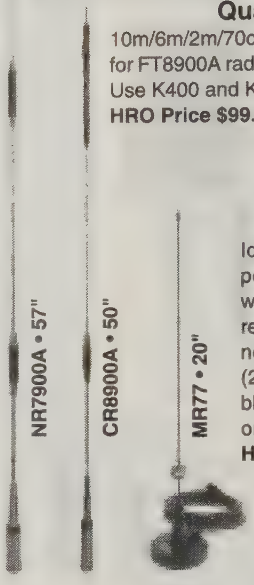
Note: Use C110, 10 ft extension for front radio installation.$14.95

Specialty Antennas

NEW!

NR7900A 2m / 70cm Mobile

High power dual-band 2m/70cm mobile antenna. 300 wtts (2m) and 250 watts (70cm). Excellent for High Power applications. Use K400 and K600 series mounts. **HRO Price $89.95**



CR8900A Quad Band FM

10m/6m/2m/70cm Quad FM band antenna for FT8900A radio or multi radio applications. Use K400 and K600 Series mounts.

HRO Price $99.95

MR77 • MR77SMA 2m / 70cm Mobile

Ideal antenna for increased performance of HT radio or where a compact antenna is required. Dual-band with Magnetic Mount base. 1/4 wave (2m) and 1/2 wave (70cm), black finish. Available in UHF or SMA cable configuration. **HRO Price $39.95**

Diamond Accessories

Model	Description	HRO Price
CA23RS	Lightning surge protector, DC-2500 MHz, 200 w, type-N female conector	$41.95
CA23RW	Lightning surge protector, DC-2500 MHz, 200 w, type-N femal, waterproof	$44.95
CX-210A	Heavy duty wideband coax switch, DC-1000 MHz. 1.5 kW, SO-239 connector.	$44.95
CX-210N	Heavy duty wideband coax switch, DC-1500 MHz. 1.5 kW, N connector.	$74.95
CX-310A	Heavy duty 3 position coax switch, wideband. DC-800MHz. SO-239 connectors.	$83.95
DL-30A	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. PL-259 connector.	$27.95
DL-30N	Dummy load. DC-500 MHz, 15W RMS (max)/100w peak. Type N connector.	$34.95
NMO/UHF	NMO to UHF adapter converting antennas with PL259 to NMO-Chrome	$12.95
NMO/UHF-B	NMO to UHF adapter converting antennas with PL259 to NMO-Black	$13.95

Diamond Handheld and Receiving Antennas

Model	Description	HRO Price
D-130J	Wideband discone 25-1300 MHz. 200 W transmit 50-1300 MHz. No cable.	$99.95
RH-3	2m / 70cm dual-band HT antenna. 1.75" BNC. 120-900 MHz receive.	$24.95
RH-77CA	High gain 2m / 70cm dual-band HT antenna. Receive range to 900 MHz. BNC.	$24.95
RH-205	2m HT antenna, telescopic, 5/8 fully extended, 47.5"; 1/4 retracted, 9".	$24.95
RH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" BNC, 10 watts.	$27.95
RH-707	2m / 70cm dual-band, tiltable whip HT antenna. 8-1/4" BNC.	$33.95
RH-951S	High gain 2m / 70 cm / 23 cm slim tri-band HT antenna. Flexible. BNC (Wide band receive)	$44.95
SRH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" SMA, 10 watts.	$29.95
SRH-77CA	High gain 2m/70cm dual-band flexible HT antenna, SMA	$29.95
SRH-320A	2m/1-1/4m/70cm tri-band HT antenna. Flexible. SMA. 10 watts	$49.95
SRH-805	2m / 70cm / 23cm tri-band HT antenna. 1.75" SMA, 10 watts.	$27.95
SRH-815	2m / 70cm / 23cm tri-band HT antenna. Flexible. 6" SMA, 6 watts.	$36.95
SRH-999	6m /2m / 70cm / 23cm quad-band HT antenna. Flexible. 21 1/4" SMA, 10 watts	$59.95

Valor

HF Mobiles

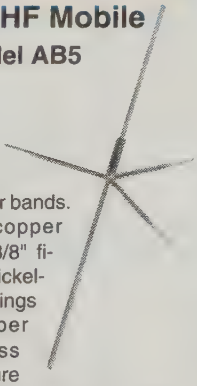
PHF Series

These mono-band mobile antennas have a black fiberglass lower section with integral coil and an adjustable (and removable) stainless steel whip (except for the PHF160). These antennas are designed for maximum efficiency, low SWR and broad bandwidth. They are power rated at 250 watts PEP and built to withstand considerable use. Standard 3/8x24 threads. Total assembled length on all models 96" (except PHF6 at 58").

Model	Band M	Band Width (kHz)	HRO Price
PHF160	160	12	$79.95
PHF80	80	35	$21.95
PHF75	75	36	$21.95
PHF40	40	60	$19.95
PHF30	30	100	$17.95
PHF20	20	150	$19.95
PHF17	17	175	$19.95
PHF15	15	200	$19.95
PHF12	12	300	$19.95
PHF10	10	500	$19.95
PHF6	6	1000	$17.95

5-Band HF Mobile

Model AB5



This heavy-duty slim-line mobile covers 75 m, 40 m, 20 m, 15 m and 10 m amateur bands. Heavy-gauge copper wire wound on 3/8" fiberglass, with nickel-chrome brass fittings and 17-7 taper ground stainless steel whips assure dependable operation. AB5T provides individual tuning for each of the 5 bands. When tuned, instant band switching is possible with good VSWR at the reset frequencies for each band. All 5 tunable whips are double locked with stainless steel screws.

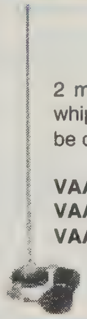
2 Meter On Glass

Glassmaster™

GM144 – 144-146 MHz

Pro-Am's on-glass antenna has a rugged copper plated whip with black finish and an interior coupler box with adjustable slot to fine tune the SWR. Power rated at 50 watts, they come with 14' of RG58 coax, a PL-259 connector, and mounting package for easy, no hole installation. **HRO Price $19.95**

Mag Mount Whips



MICRO-MAG™

2 m kit with 17-7 ph stainless steel whip and 12' of cable to a PL-259. Can be cut for 220 or 450 MHz.

		HRO Prices
VAA-002	PL-259 chrome	$23.95
VAA-002B	PL-259 black	$23.95
VAA-002BNC	with BNC	$27.95

VHF / UHF Dual-Band

Cover-It-All

2 m / 70 cm Antenna

Cover It All with a 19" stainless steel whip. Its 1-1/8" threads match Pro-Am mounts and 3/4" hole Motorola TAD/TAE mounts. The antenna covers 144-148 MHz and 435-450 MHz with less than 2:1 SWR. Handles up to 150 watts. **MO144-440: HRO Price $16.95**

Magnetic *Cover-It-All*

These 2 m / 70 cm antennas that *Cover It All* come with magnetic mount and 12' of RG58 cable with BNC or PL259 connector. Black finish.

		HRO Prices
PM144-440 BN	BNC	$19.95
PM144-440	PL-259	$14.95

Maxi-Magnet Mount

Three 5" magnetics are equally spaced on a heavy duty aluminum frame. Pre-wired to a wafer termi-nation with 17' of RG58 coax and PL-259 connector. For standard 3/8x24 antennas. Order in black: MM3401B. **Model MM3401: HRO Price $39.95**

Maldol

Hand-Crafted Antennas

HF Mobiles for Yaesu's FT-817

Stainless steel telescoping HF whips have BNC connectors. Excellent SWR and receive capabilities. 10 and 20 m antennas are **complete**; other bands are added as parts.

Model		List Price
AH-28	10 m antenna with BNC	$45.95
AH-14	20 m antenna with BNC	45.95
AH-R	Whip for AH-C7, 14, 21, 28	17.95
AH-C7	40 m loading coil only with BNC	33.95
AH-C14	20 m loading coil only with BNC	33.95
AH-C21	15 m loading coil only with BNC	33.95
AH-C28	10 m loading coil only with BNC	33.95

Dual Band Mobiles

Models for 2m / 70cm have a black finish.

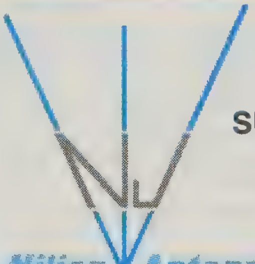
Model	Max Pwr	Gain	Lgt	Conn
EX-107RB	80 watts	2.6/4.9	29"	PL-259
EX-107RBNMO	80 watts	2.6/4.9	29"	NMO
SHG-1500B	200 watts	4.5/7.5	59"	PL-259
SHG-1500BNMO	200 watts	4.5/7.5	59"	NMO

2-Meter Mobiles

Ground independent models are center loaded 5/8 wave.

Model	Max Pwr	Gain	Lgth	Conn
SHG-140	200 watts	4.1	56"	PL-259
SHG-140NMO	200 watts	4.1	56"	NMO

2m / 220 / 440



SUPER-M V/U NMO

VHF / UHF

Mobile Antenna

HRO Price: $72.95

Niljon Antennas

The typical 1/4 wave antenna (as well as other types) used on commercial (taxis, trucking companies, etc.) and government vehicles (ambulances, other city vehicles, school buses, state patrol, etc.) can easily be replace by the SUPER-M with tremendous, even life-saving, results. One antenna does it all, covering 140-170 MHz, 200-225 MHz and 400-480 MHz. The antenna handles 200 watts with a direct feed and is only 18" high.

SUPER-M V/U screws directly onto a 5/16" - 24 thread stud mount [also called the "LM" Larsen Mount].
SUPER-M V/U-NMO comes packaged with an adapter to screw onto a Motorola NMO style mount.

MAXRAD

Quality VHF / UHF antennas are available.
Please call for models, specifications, & quotes.

HANDHELD ANTENNAS

Duckies & Telescoping Antennas

PRYME®
Radio Products

VHF / UHF Dualband Antennas

RD-2 SMA
2 M / 440 MHz, 2" tall small duck, SMA connector. **HRO Price $19.95**

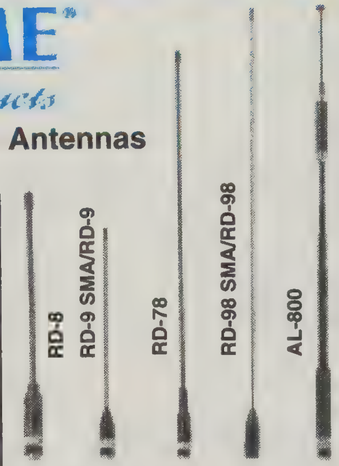
RD-8
2 M / 440 MHz, flexible 6.5" tall HT antenna, gold plated BNC connector. **HRO Price $17.95**

RD-9
2 M / 440 MHz, thin 7" antenna, BNC connector. **HRO Price** $xx.95

RD-9 SMA
2 M / 440 MHz, thin 7" antenna, SMA connector. **HRO Price $21.95**

RD-78
2 M / 440 MHz, flexible 15" tall HT antenna, 2.15 dB / 3.2 dB gain, gold plated BNC connector. **HRO Price $22.95**

RD-98
2 M / 440 MHz, 17" tall, 1/16" diameter HT antenna, BNC connector. **HRO Price $24.95**



RD-98 SMA
2 M / 440 MHz, 17" tall, 1/16" diameter HT antenna, SMA connector. **HRO Price $27.95**

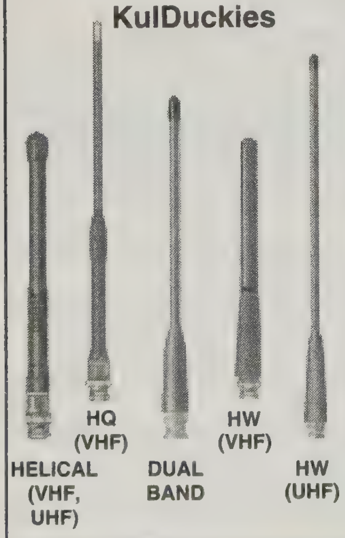
AL-800
2 M / 440 MHz, telescoping antenna, extends to 34", collapses to 10". Whip replaceable with 9" rat tail (included), 3.2/5.5 dB gain, gold plated BNC connector. **HRO Price $34.95**

RADIALL/LARSEN
antenna technologies

KulDuckies have outstanding transmit range with 1.5:1 VSWR. Made of copper and brass radiators, they are scope tuned to precise frequencies. Constructed with soldered connections, plasticol dip process, injection-molded housings and silver plated contact.

KulDuckies are available in Helical (VHF, UHF), HQ Helical (VHF), Dual Band, and Half Wave.

KulDuckies



KD4 2/70
Amateur dual band KD antenna, BNC connector. **HRO Price $48.00**

KD4 FREQ HQ
Helical 1/4 wave 136-222 MHz (specify frequency), 9 1/2" tall, BNC connector. **HRO Price $30.00**

KD4 VHF
VHF helical 136-222 MHz (specify frequency), 8" tall, BNC connector. **HRO Price $24.00**

KD4 UHF
UHF helical 406-512 MHz (specify frequency), 3"tall, BNC connector. **HRO Price $24.00**

KD142 MHW
Collapsible 1/2-wave 144-155 MHz, 11" to 44 1/2" tall, BNC connector. **HRO Price $46.00**

MOBILE ANTENNAS

On-Glass Antennas

RADIALL/LARSEN
antenna technologies

Single Band 1/2-Wave

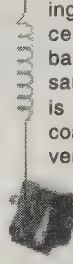
Larsen's full selection of on-glass antennas for single-band and dual band use are described on page 101. All single band antennas are precut. A single 1/2 wave design provides 2.4 dB gain.

KG-144-PL
2 M **HRO Price $64.95**

KG-220-PL
220 MHz **HRO Price $64.95**

KG-440-PL
440 MHz **HRO Price $54.95**

Antenna Specialists



<— **AP-143**

This unique on-glass styling with a coil looks like a cellular antenna. Broad banded. No tuning necessary. The length of the whip is only 26 inches. Black coating on the antenna is very attractive. No ground plane required.
HRO Price $55.95

2m / 70 cm Dual-Band Antennas

There are more dual-band antennas on these pages:

COMET	RADIALL/LARSEN antenna technologies	DIAMOND ANTENNA
See Page 98	**See Page 101**	**See Page 102**

Brand	Model	Type	Frequency MHz	Gain	Weight oz.	HRO Price
Larsen	NMO 2/70	2m	144-148	2.6 dB	3.9	$54.00
		70 cm 5/8 collinear	440-450	5.5 dB		
Austin	500C	2 m	144 -148	Unity	6	$32.95
		70 cm	440 - 450			
	Metropolitan	2 m	144 -148			$39.95
		220 MHz	220 - 225	Unity	6	
		70 cm	440 -450			
Valor	GM270	2m	144 -148	2.6 dB	–	$39.95
		70 cm	440 - 450	4.0 dB		
	MM270B	2m	144 -148	–	–	$39.95
		70 cm	440 - 450	–		
	PM144-440	2m	144 -148	–	–	$19.95
		70 cm	440 - 450	–		
	MO144-440	2m	144 -148	Unity	–	$16.95
		70 cm	435 - 450	2. dB		

Duplexers

When using a single antenna with mobile radios that have separate 2 meter and 440 MHz outputs, you must use a duplexer.

Yaesu's AD-3 handles up to 50 watts. Its short cables attach to VHF radios with an SO-239 and to UHF with a type N connector. VHF to UHF isolation is 50 dB. **HRO Price $49.95**

Comet Antenna has a wide variety of duplexers & triplexers with gold-plated connectors, high isolation and the highest power handling abilities. See page 99.

Diamond has a wide collection of duplexers and triplexers for coupling antennas and transceivers. See page 103.

OUTbacker®

The Ultimate All-Band
HF Mobile Antennas

< Perth & Perth Plus Antennas

HRO Prices:
Perth $329.95
Perth Plus
$329.95

The Perth covers 10-80 meters and the Perth Plus adds the 6m and 2m bands. Both are sleek 3-1/2 foot stingers with a 4 foot main shaft where the taps are located. They have a tough, yet flexible fiberglass core, helically wound with copper wire hand tuned to the various "tap" frequency points. Both offer high performance with low wind drag. Mount them easily on a trunk lip, hatch, or bumper with a standard 3/8 X 24 stud. The stinger retracts into the main shaft for easy stowage. With a proper ground plane, Perth antennas are also suitable for apartment and condo installations.

Outreach Antenna

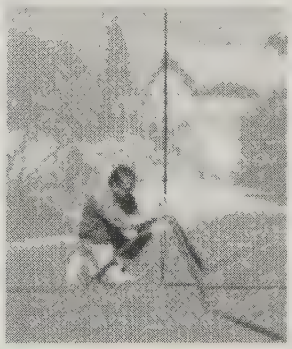
HRO Price $419.95

- A portable antenna system for limited-space or temporary installations.
- All bands, 160–10 meters, including WARC and only 12 ft. tall!
- 10, 12, and 15 meters are ⁵/₈ wave; all bands are center loaded for peak performance.
- Handles 150 watts P.E.P.
- Split 8 foot shaft and 4 foot stinger–antenna breaks down to 4 feet for easy portability.
- Ends in standard ³/₈ x 24 base.
- Uses Outbacker's® band tap system.

< Outbacker Antenna

HRO Price $319.95

With the Outbacker® there is no need to change coils when changing HF bands. The antenna comes in a six foot version that handles up to 300 watts PEP and a four foot Junior model for up to 150 watts PEP. The antennas are made of fiberglass coated with smooth epoxy resin and polyurethane. The pre-tuned copper helical winding has connection sockets constructed of rust-free brass, clearly marked for each band. The antenna covers all bands from 10 to 80 meters. Mount the antenna with a standard 3/8 X 24 thread. Use Hustler's BM-1 or SSM ball mounts. Optional heavy duty spring and 2" base can be mounted at the bottom of the antenna and attached to a PL-259.



Alpha Delta Outpost™ Tripod / Ground Coupler Ground Mount System

HRO Price $195.95

- Matches the base impedance of all Outbacker® antennas.
- Fold-over ³/₈ x 24 SO-239 top mount.
- Constructed of aircraft 6061-T6 aluminum, stainless steel hardware and wing nuts.
- No digging–no holes in ground–no concrete.
- Fold-out legs act as a large capacitor providing proper coupling to the ground and proper base impedance to the antenna. Fold-up design for 10-minute installation.

Outbacker "Joey"

HRO Price $299.95

- Covers HF/VHF bands 2m through 80m including WARC bands.
- Rated at 20 W, all modes.
- Uses Outbacker tap system.
- Smaller antenna packs away in its included cloth transport.
- Comes with a 12 foot copper braid counterpoise.
- Can be installed directly on the FT817 rear SO-239 connector.
- Has a 30" shaft and a 20" stinger when fully extended. Weighs just over a pound.

MicroMount

HRO Price $49.95

For use with the "Joey," MicroMount has a fixed height of 8" with a 12" diameter footprint on 3 legs. It folds to an 8" length. Has a fully articulated pan head mount. Includes a 12" velcro strap for mounting to most anything. Includes a 3 counterpoise system and weighs less than 10 ounces.

HF Mobile

Ham Sticks®

Ham Sticks® are two-piece mono-band antennas consisting of a hollow fiberglass base section, a loading coil wound directly onto the fiberglass, with a covering of PVC shrink tubing. The black oxide brass base fitting has 3/8" X 24 male threads that fit most amateur mobile mounts. The top section is a tapered 17-7 PH tempered stainless steel whip that telescopes into the base section for frequency adjustment. The assembled antenna is about 7' long.

Model	Band	HRO Price
9175	75 m	$26.95
9160	60 m	$24.95
9140	40 m	$24.95
9130	30 m	$24.95
9120	20 m	$24.95
9117	17 m	$24.95
9115	15 m	$24.95
9112	12 m	$24.95
9110	10 m	$24.95
9106	6 m	$24.95

SGC

QMS Quick Mount System

Add a QMS to your HF SSB mobile system – an SGC Smartuner along with an efficient whip antenna – for increased radiation and efficiency. The QMS can be installed on any small or large vehicle (sports car, SUV, or sedan) without drilling any holes or damaging the car body. Permanent or temporary installation takes just 15 minutes using industrial-strength straps, buckles and 4 suction cups. Mount the QMS on the vehicle side, trunk, roof or other location. Most QMS systems come with a lightweight mobile antenna (either Model SG-303 or SG-307) which provides a wide frequency range and easy tuning of the Smartuner.

The Antennas

The **SG-307** antenna is 7 ft. and the **SG-303** antenna is 9ft. Both are dual resonant whips supplied with mounting hardware. The antennas are two section with an inner core of large stainless steel rod and a layer of fiber composite helically wrapped.

System Configurations

55-47 – QMS-2

Quick Mount System with SG-230 antenna coupler, SG-303 antenna, strapping elements, 4 suction cups, & mounting hardware (150 W; 1.6-30 MHz). **HRO Price $995.95**

55-48 – QMS -3

Quick Mount System with SG-235 antenna coupler, SG-303 antenna, strapping elements, 4 suction cups, & mounting hardware (500 W; 1.8-30 MHz). **HRO Price $2299.95**

55-49 – QMS-7

Quick Mount System with SG-231 antenna coupler, SG-307 antenna, strapping elements, 4 suction cups, & mounting hardware (100 W; 1-60 MHz). **HRO Price $1299.95**

55-50 – QMS-37

Quick Mount System with SG-237 antenna coupler (100 W; 3.5-60 MHz). (Antenna not provided and any stainless steel whip can be used.) *Special Order.* **HRO Price $595.95**

MA-SERIES CRANK-UP MASTS

The premier MA-Series crank-up Tubular Towers are designed to be both safe and neighbor friendly. The slender design gives a Clean, flagpole-like appearance, while allowing for antennas up to 10 sq. feet in 50 mph winds. Per EIA Specifications, adequate safety margins are included. Uniform Building Code calculations are available for most models.

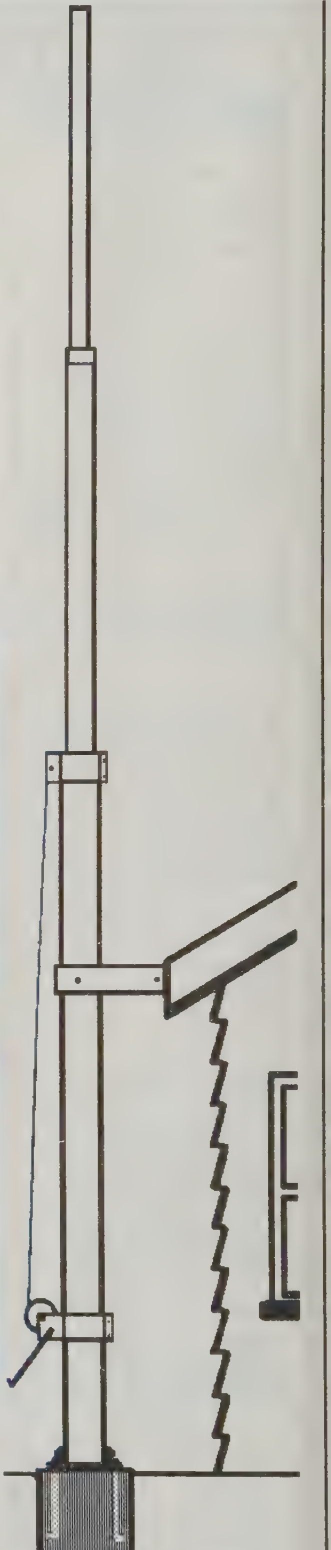
The MA-40 and 550 models come standard with flat base. two 1/2" x 10" anchor bolts, wall bracket and rotor plate mounted on top of top section. No guying is required when tower is properly bracketed to the eve of your roof.

MA-Series towers are completely self-supporting only when used with accessory MARB or MAB Series bases. The MARB Series rotor base allows the entire tower and antenna to be rotated from the base (rotor not included). This provides for easy rotor maintenance plus emergency hand rotation of the entire tower and antenna.

The MA-550MDP, 770MDP and 850MDP models include a heavy duty motor drive with positive pull down. The MDP models provide motorized raising and lowering of the tower. A remote control unit (RMC-1000) accessory is available that allows raising and lowering from your ham shack or other remote location.

All models without motor drives come standard with manual hand winches which have load actuated brakes for maximum safety. This feature prevents the winch from free-wheeling and causing injury to you or your installation in the event that you lose your grip during raising or lowering.

All steel used at US Tower conforms to ASTM specifications. All welding is done by certified factory personnel. All of our towers are factory tested by trained personnel before leaving the plant.

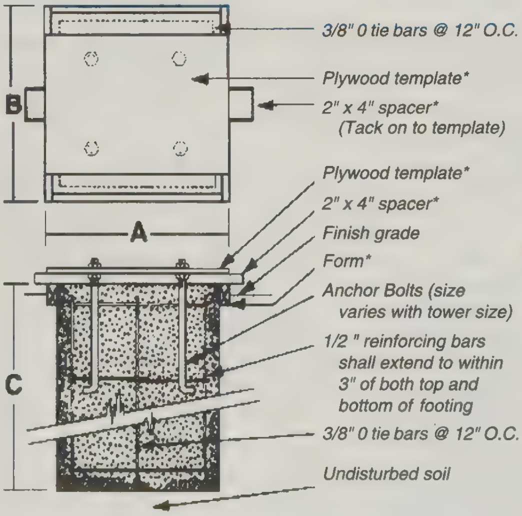


Model Number	Height Maximum	Height Minimum	Sections	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
MA-40	40'	21'6"	2	242	3" sq.	4.5"	CALL
MA-550	55'	22'1"	3	435	3" sq.	6.625"	CALL
MA-550MDP*	55'	22'1"	3	620	3" sq.	6.625"	CALL
MA-770	75'	22'10"	4	645	3" sq.	8.0"	CALL
MA-770MDP*	75'	22'10"	4	830	3" sq.	8.0"	CALL
MA-850MDP*	90'	23'6"	5	1128	3" sq.	10.0"	CALL

All Towers will handle 10 sq. ft antenna at 50 MPH winds.

* These towers also requires purchase of MCL-100 or RMC-1000

MA-SERIES BASE INFORMATION


3/8" 0 tie bars @ 12" O.C.
Plywood template*
B
2" x 4" spacer* (Tack on to template)
A
Plywood template*
2" x 4" spacer*
Finish grade
Form*
C
Anchor Bolts (size varies with tower size)
1/2 " reinforcing bars shall extend to within 3" of both top and bottom of footing
3/8" 0 tie bars @ 12" O.C.
Undisturbed soil

**To be removed after base is installed.*

Model	A	B	C	HRO Price
MA-40 standard flat base	16"	16"	16"	CALL
MA-550 standard flat base	20"	20"	20"	CALL
MARB-40 Rotator Base	3'	3'	4'	$659.95
MARB-550 Rotator Base	3'	3'	5'6"	$769.95
MARB-770 Rotator Base	3'	3'	6'6"	$899.95
MARB-850 Rotator Base	4'	4'	6'6"	$1,099.95

Base dimensions may vary with different soil compositions.
Allow ample time for concrete to cure.
MAB and MARB dimensions are the same.

Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Rebar is not provided by US Tower. MA-40 & 550 use their standard base as a template. These standard bases use only 2 bolts and require no rebar. Wooden template included with MAB & MARB bases.

Because of wide variations throughout the country in zoning requirements and loading conditions (snow, wind, ice, etc.), it is the responsibility of the customer to make Certain that his Tower conforms to all applicable codes. We recommend you obtain all necessary permits prior to purchase .

The factory reserves the right to make changes or modifications without notice.

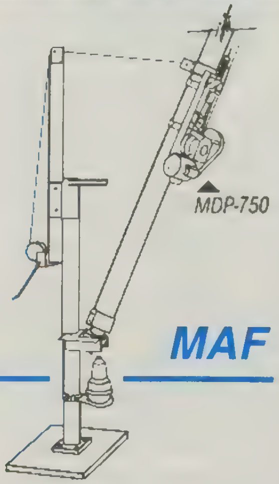
MA-SERIES ACCESSORIES

MAF Raising Fixture

MAF-Series Raising Fixture accessory for easy raising and antenna servicing. For use with MARB and MAB bases.

Model	Description	Weight
MAF-40	Raising fixture for MA-40	35#
MAF-550	Raising fixture for MA-550	70#
MAF-770	Raising fixture for MA-770	75#
MAF-850	Raising fixture for MA-850	80#

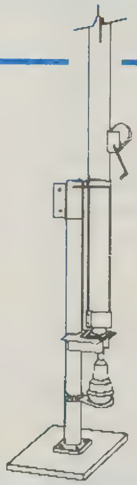
The Customer is Responsible
for obtaining all local city or county building and tower permits
AND
for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.



MAF

MARB Freestanding Rotator Base

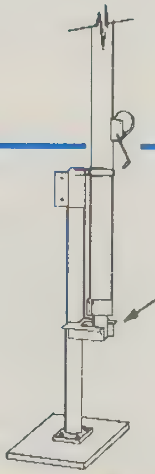
Model	Description	Weight
MARB-40	Freestanding rotator base for MA-40 with four 3/4" x 27" anchor bolts and thrust bearing	75#
MARB-550	Freestanding rotator base for MA-550 with four 1" x 36" anchor bolts and thrust bearing	140#
MARB-770	Freestanding rotator base for MA-770 with four 1" x 36" anchor bolts and thrust bearing	195#
MARB-850	Freestanding rotator base for MA-850 with four 1-1/8" x 36" anchor bolts and thrust bearing	280#



MARB

MAB Freestanding Type Base

Model	Description	Weight
MAB-40	Freestanding hinged base for MA-40 with four 3/4" x 27" anchor bolts	55#
MAB-550	Freestanding hinged base for MA-550 with four 1" x 36" anchor bolts	119#
MAB-770	Freestanding hinged base for MA-770 with four 1" x 36" anchor bolts	175#
MAB-850	Freestanding hinged base for MA-850 with four 1-1/8" x 36" anchor bolts	180#



Hinging allows for easy installation on both MAB and MARB bases.

MAB

Coax Standoff Arms

Model	Description	Weight
CX-2M	Coax standoff arms for MA-40	4#
CX-3M	Coax standoff arms for MA-550	6#
CX-4M	Coax standoff arms for MA-770	8#
CX-5M	Coax standoff arms for MA-850	10#
IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with the MARB rotator base.	5#

Call Toll-Free for Discounts on U.S. Towers and Accessories

Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with one HP motor and gear box.	155#

Remote Control Accessories

Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location.	18#
MCL-100	Limit switch control package includes limit switches, limit switch brackets, and control box at the base of the tower.	7#

TMM SERIES

US Tower's latest design includes the compact TMM Series towers giving Hams in restricted areas an alternative. The TMM Series has a minimum retracted height of 11'4" (may vary, depending on rotator used) and a maximum height of 47' including mast. At the towers' retracted height, visual impact is reduced to a minimum and antenna servicing is made easier. Typically the tower and antenna are below the roof line of your home when the tower is fully retracted.

The TMM Series towers are lightweight, freestanding crank-up towers that allow up to 18 square feet of antenna in 50 mph winds per EIA specifications. The TMM-433HD handles 24 square feet.These lightweight towers should provide many years of trouble free service.All of our towers have a hot dipped galvanized finish inside and out.

The TMM-433SS and 541SS must have the rotator top mounted. The TM-433HD will accept the Alliance HD-73 and Telex Ham IV inside the tower. Oversized rotators will prevent full retraction of your tower; however, they may be used if full retraction is not required. This restriction is dependent on location of rotator plate. All TMM Series towers include anchor bolts, rotor plate, hinged T-base, load actuated winch, and eight feet of 2" OD x 120" antenna mast.

The TMM-433SS will accept the MD-75 motor drive accessory. The TMM-433HD and 541SS will accept the MD-75 and MDP-750 accessory motor drives. The MDP-750 motor drive accessory is compatible with both of our MCL-100 and RMC-1000 limit switch packages (see accessories).

TX SERIES

US Tower's freestanding TX Series crank-up towers are as strong or stronger than most competitors' heavy-duty models. The TX Series towers have 21 foot sections with 4 foot overlap to provide extra height and strength. In addition, the overlap helps prevent binding while lowering your tower in high wind and conditions.

The TX Series towers have a large enough top section (12 1/2") to permit installation of most rotators inside the section for maximum strength while allowing the section to fully retract. Cross bracing at critical points on the tower ensures safety and additional strength. All US Towers crank-up towers have a heavy-duty, hot dipped galvanized finish both inside and out, which should provide many years of trouble free service.

The TX Series towers come complete with rotator plate and base hardware which includes, large steel anchor bolts and heavy-duty steel T-base that allows the tower to hinge on for easy installation. All T-bases will accept the TRX Series raising fixtures for easy one man installation. All TX Series towers include Fulton hand winches (except MDP and MDLP models) which feature automatic load actuated brakes for maximum safety. Masts and motor drives are available as accessories (see accessory page).

The TX-472MDP comes complete with MDP-750 motor drive and limit switch brackets. The TX-489MDPL includes the MDPL-1000 motor drive and limit switch brackets. Limit switch assemblies and remote raising devices are available (MCL-100) (RMC-1000) for all MDP-750 and MDPL-1000 motor drive units (see accessory page for description).

US Tower's TX Series requires no guying.The wind loading is calculated at 18 square feet of antenna in 50 mph winds per EIA specifications.To assist you in applying for necessary construction permits, Uniform Building Code calculations are available for most models.

HDX SERIES

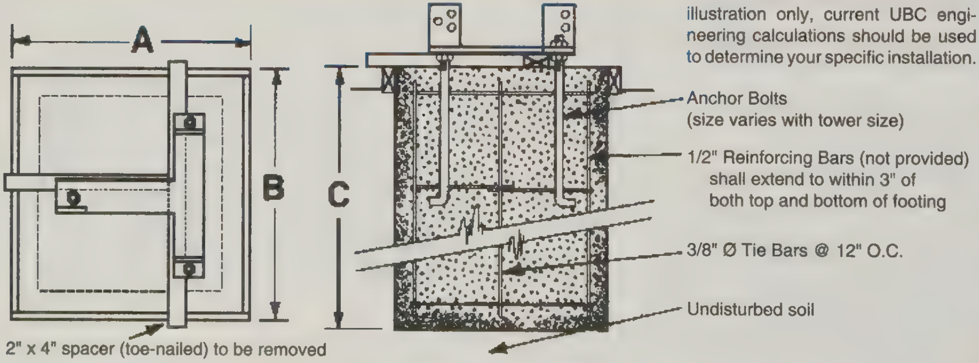
US Tower's HDX Series heavy-duty crank-up towers have up to 2 1/2 times more windloading capacity than others commonly advertised. This superior strength allows for large stacked arrays, while using our commercial type bases and anchor bolts that can be easily installed and vertically adjusted. All HDX Series T-bases are designed to use our TRX Series raising fixtures to make installations and antenna servicing a one man job.

Modified top sections for the HDR-300 rotators are available at a small additional cost. US Tower carries as accessories many different sizes and strengths of masts which can be used with the HDX Series towers. The HDX-572MDPL and 589MDPL motorized towers provide dual level wind, positive pull down and heavy duty gear box features. The HDX-572MDPL comes only with limit switch brackets. The HDX-589MDPL comes complete with the MCL-100, limit switch package. All towers using MDP-750 and MDPL-1000 motor drives may use the RMC-1000 accessory limit switch package which allows the raising and lowering of your tower from the comfort of your ham shack or any remote location. MCL-100 is also available (see accessory page).

All HDX Series towers come complete with rotator plate, anchor bolts and heavy-duty T-base (doubles as template). US Tower's special T-base design allows the tower to hinge for easy installation. US Tower's crank towers do not require guy wires. The HDX Series towers are rated at 30 square feet of antenna at 50 mph winds per EIA specifications. To assist you in getting a construction permit, Uniform Building Code calculations are available for most towers.

CRANK-UP TOWER BASE INFORMATION

Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.


A
B
C
Anchor Bolts
(size varies with tower size)
1/2" Reinforcing Bars (not provided)
shall extend to within 3" of
both top and bottom of footing
3/8" Ø Tie Bars @ 12" O.C.
Undisturbed soil
2" x 4" spacer (toe-nailed) to be removed

Model	A	B	C
TMM-433SS	4'	4'	4'6"
TMM-541SS	4'	4'	5'
TMM-433HD	3'	3'	5'
TX-438	5'	5'	5'
TX-455	5'	5'	6'
TX-472	5'	5'	6'6"
TX-489	5'	5'	8'
HDX-538	5'	5'	6'
HDX-555	5'	5'	6'6"
HDX-572	5'	5'	7'
HDX-589	5'	5'	8'
HDX-5106	5'	5'	9'
MA40	3'	3'	4'6"
MA550	3'6"	3'6"	5'
MA770	5'	5'	5'6"
MA850	5'	5'	6'

SELF-SUPPORTING CRANK-UP TOWERS

Tower Specifications

COMPACT TMM-SERIES CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TMM-433SS	33' w/o Mast	11'4"	4	315	10"	18"	CALL
TMM-433HD	33' w/o Mast	11'4"	4	400	12.5"	20 7/8"	CALL
TMM-541SS	41' w/o Mast	12'	5	430	10"	20 7/8"	CALL
Towers handle 18 sq. ft. antenna at 50 MPH winds. TMM-433HD handles 24 sq. ft.							

TX-SERIES FREE-STANDING CRANK-UP TOWERS

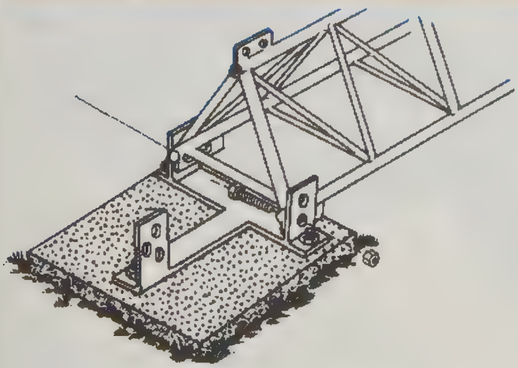
Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TX-438	38'	21'6"	2	355	12.5"	15"	CALL
TX-455	55'	21'	3	670	12.5"	18"	CALL
TX-472	72'	22'8"	4	1040	12.5"	21 5/8"	CALL
TX-472MDP*	72'	22'8"	4	1210	12.5"	21 5/8"	CALL
TX-489MDPL	89'	23'4"	5	1800	12.5"	25 5/8"	CALL
All Towers will handle 18 sq. ft. antenna at 50 MPH winds.							

* This tower requires purchase of MCL-100 or RMC-1000

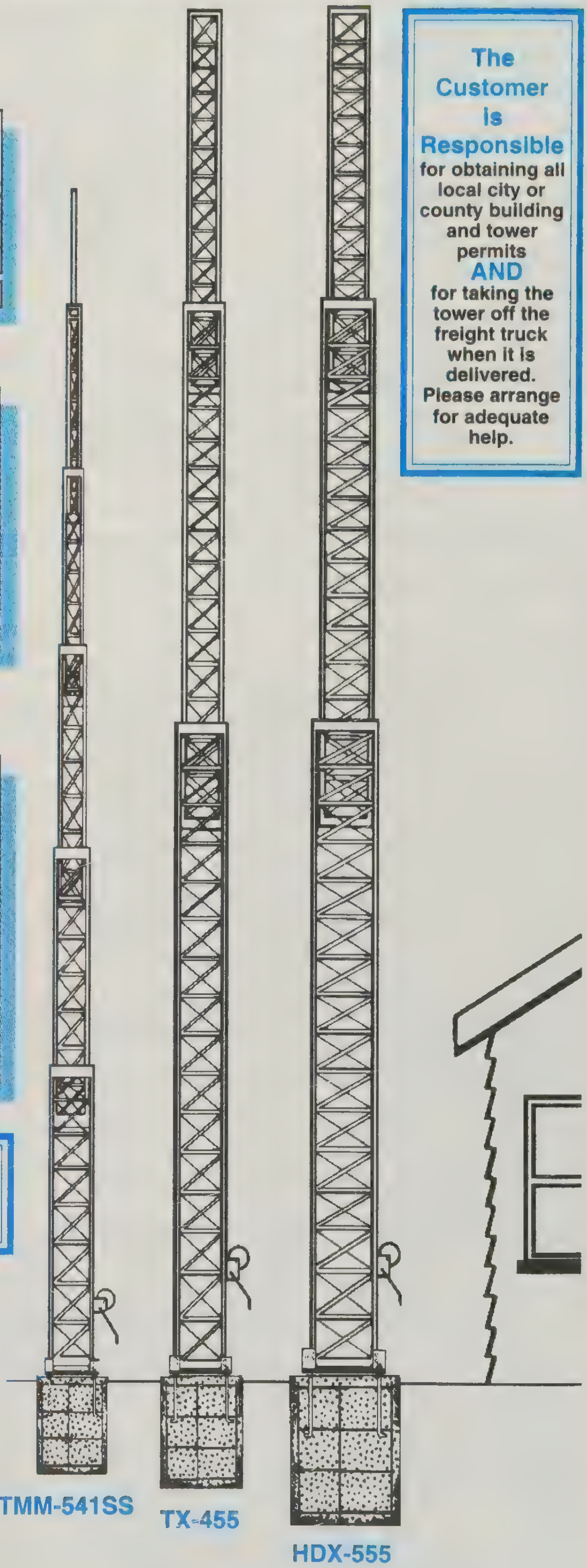
HDX-SERIES HEAVY-DUTY CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
HDX-538	38'	21'6"	2	600	15"	18"	CALL
HDX-555	55'	22'	3	870	15"	21 5/8"	CALL
HDX-572MDPL	72'	22'8"	4	1600	15"	25 5/8"	CALL
HDX-589MDPL	89'	23'8"	5	2440	15"	30 5/8"	CALL
HDX-689MDPL	89'	23'8"	5	3450	18"	37 1/8"	CALL
HDX-5106MDPL	106'	24'8"	6	3700	15"	37 1/8"	CALL
All Towers will handle 30 sq. ft. antenna at 50 MPH winds. HDX-689MDPL rated at 60 sq. ft of antenna at 50 mph winds. HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.							

Call Toll-Free for Discounts on U.S. Towers and Accessories

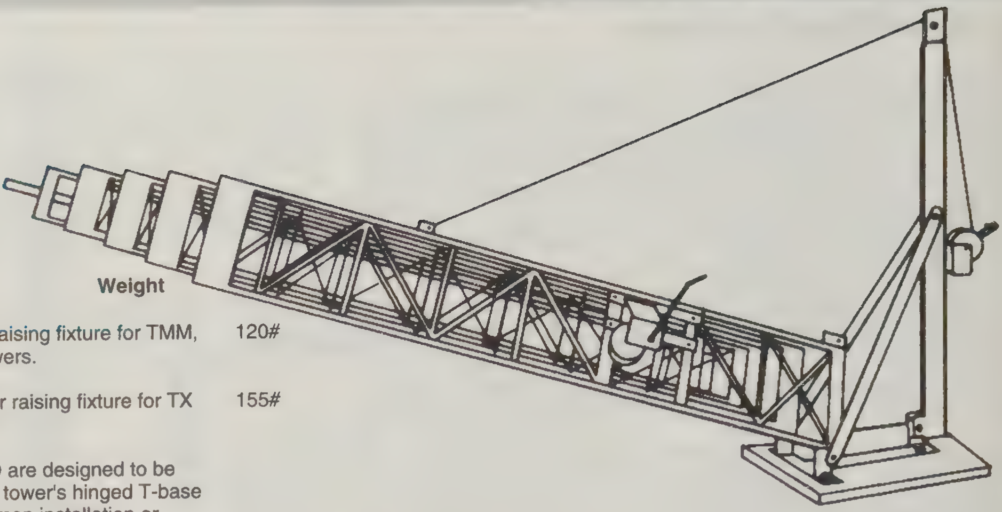


The Customer Is Responsible for obtaining all local city or county building and tower permits **AND** for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.



The factory reserves the right to make changes or modifications without notice.

US TOWER
CORPORATION

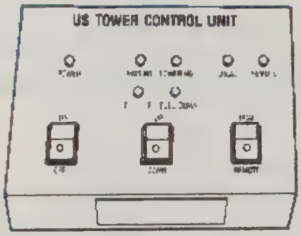


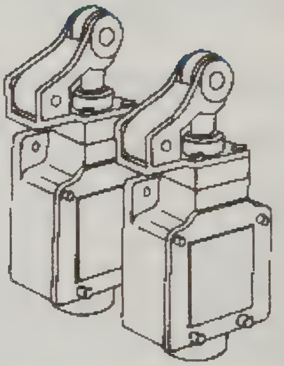
Raising Fixture

Model	Description	Weight
TRX-80	Standard model tower raising fixture for TMM, TX, and HDX series towers.	120#
TRX-80HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	155#

Both TRX-80 and 80HD are designed to be easily mounted on your tower's hinged T-base for quick and safe one-man installation or antenna servicing.

Remote Control



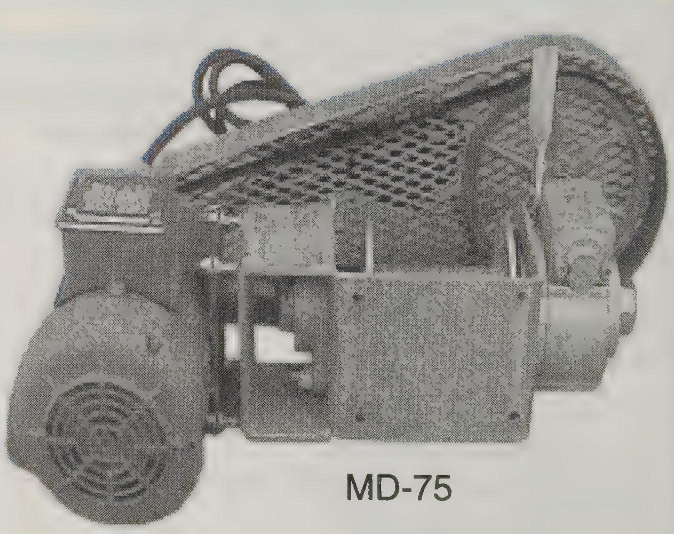


Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location. The RMC-1000 includes limit switches, limit switch brackets, and two relay boxes. The RMC-1000 can only be used with the MDP-750 and MDPL-1000 motor drives.	18#
MCL-100	Limit switch control package. The MCL-100 includes limit switches, limit switch brackets and control box at the base of the tower. The MCL-100 allows you to raise and lower your tower with automatic shut down when maximum or minimum height is reached. The MCL-100 can only be used with the MDP-750 and MDLP-1000 motor drives.	7#

Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with 1 HP motor and gear box.	155#

Call factory for replacement 1 HP motors, handwinches, limit switches, 3/16" x 7" x 19" and 1/4" x 7" x 19" aircraft cable, anchor bolts, belts, pulleys, sprockets, and modified bases. Tower dolly rentals are available. The factory reserves the right to make changes or modifications without notice.



MD-75

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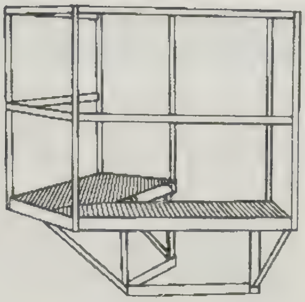
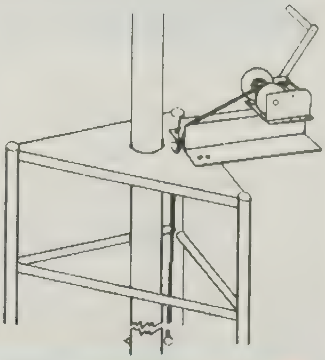
for obtaining all local city or county building and tower permits AND for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

CRANK-UP ACCESSORIES





Service Platform

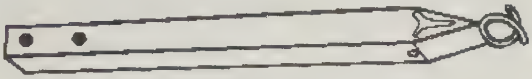
Model	Description	Weight
HDP	Large service platform with safety railings to provide a safe and comfortable surface while installing or maintaining your antenna and rotator.	125#

Mast Raising Fixture

Model	Description	Weight
MRF	Mast raising fixture with winch and cable that attaches to the top of your tower to assist in raising and lowering your antenna mast.	20#

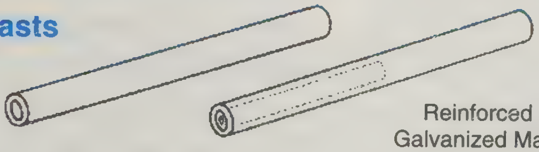
Coaxial Arm Sets

Model	Description	Weight
IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with MARB rotator base.	5#



Model	Description	Weight
CX-2	Set of 2 coax standoff arms	6#
CX-3	Set of 3 coax standoff arms	8#
CX-4	Set of 4 coax standoff arms	10#
CX-5	Set of 5 coax standoff arms	13#

Masts

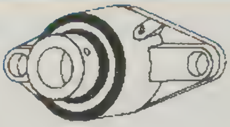


US Tower offers two different types of masts. The M-5, 10, 15 and 20 masts have .120" wall thickness. The M-15R and 20R have steel pipe inserts in the lower half of the mast which provides extra strength where most needed without adding unnecessary weight in the top portion. The M-15R and 20R have a wall thickness of .250".

Model	Description	Weight
M-5	2" O.D. x 5 foot galvanized mast	14#
M-10	2" O.D. x 10 foot galvanized mast	25#
M-15	2" O.D. x 15 foot galvanized mast	40#
M-15R	2" O.D. x 15 foot reinforced galvanized mast	50#
M-20	2" O.D. x 20 foot galvanized mast	55#
M-20R	2" O.D. x 20 foot reinforced galvanized mast	70#
CM-20	2" O.D. x 20 foot chromolly mast	140#

3/4" x 27"	Anchor bolt with 2 nuts	5#
1" x 27"	Anchor bolt with 2 nuts	10#
1-1/8" x 27"	Anchor bolt with 2 nuts	12#
RP-3	Rotator plate for 10" section	5#
RP-4	Rotator plate for 12.5" section	7#
RP-5	Rotator plate for 15" section	9#

Thrust Bearing



TB-2US	Thrust Bearing for 2" mast, 2 flange holes	10#

Tower Accessories

R- Required S- Standard O - Optional	TX-438	TX-455	TX-472	TX-472MDPL	TX-489	TX-489MDPL	HDX-538	HDX-555	HDX-572	HDX-572MDPL	HDX-589MDPL	TMM-433SS	TMM-433HD	TMM-541SS	HRO Price
Masts															
M-5	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$51.95
M-8												S	S	S	$79.95
M-10	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$94.95
M-15	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$129.95
M-20	O	O	O	O	O	O	O	O	O	O	O				$169.95
M-15R	O	O	O	O	O	O	O	O	O	O	O				$199.95
M-20R	O	O	O	O	O	O	O	O	O	O	O				$249.95
CM-20	O	O	O	O	O	O	O	O	O	O	O				$519.95
Raising Fixture															
TRX-80	O	O					O	O				O	O	O	$499.95
TRX-80HD			O	O	O	O			O	O	O				$699.95
Service Platform															
HDP			O	O	O	O			O	O	O				$1,299.95
Coax Standoff Arms															
CX-2	O						O								$68.95
CX-3		O						O							$94.95
CX-4			O	O					O	O		O	O		$139.95
CX-5					O	O					O			O	$189.95
Motor Drives															
MD-75	O	O					O	O				O	O	O	$1,099.95
MDP-750		O	O	S				O					O	O	$1,699.95
MDPL-1000			O		O	S			O	S					$2,699.95
Remote Control															
RMC-1000		O	O	O	O	O		O	O	O	O		O	O	$1,249.95
MCL-100		O	O	R	O	S		O	O	S	S		O	O	$519.95
Miscellaneous															
3/4" X 27 bolts	S														$36.95
1" X 27" bolts		S			S	S	S		S	S					$43.95
1-1/8" X 27" bolts			S	S				S			S				$58.95
RP-3												S		S	$39.95
RP-4	S	S	S	S	S	S							S		$47.95
RP-5							S	S	S	S	S				$52.95
MRF	O	O	O	O	O	O	O	O	O	O	O		O		$329.95
TB-2US	O	O	O	O	O	O	O	O	O	O	O		O		$119.95
IV-16	O	O	O	O	O	O	O	O	O	O	O	O	O	O	$51.95

WEATHER STATIONS

Weather Stations

Ultimeter 2100

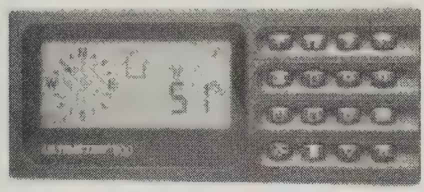
HRO Price $399.95

Tracking more than 100 weather values

2983
ULTIMETER 2100

The Ultimeter 2100 features a stunning platinum-tone housing with brilliant blue display backlighting. To enhance the user interface still further, an illuminated keypad provides exceptional visibility in darkness or low-light conditions. The unit utilizes Peet Bros. patented and proven weather sensor technology, including a unique all-digital wind sensor. Its microprocessor is 8 times faster and has 4 times the memory of their earlier weather stations. Major features include:

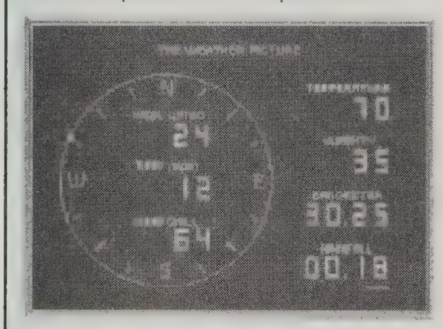
- Barometric pressure and numeric pressure change over a 3 hour period plus preset barometric Storm Alert, Wind Speed, Wind Direction, Outdoor Temperature, Indoor Temperature, Wind Chill, Time, Date and (with optional sensors) Indoor Humidity, Dew Point and Rainfall.
- Two versatile 4-mode serial ports can accept remote commands, making it easy to communicate with external devices to transmit data or collect it remotely by phone, modem, or radio link. The 5 minute packet mode is perfect for economical radio "beacon" transmission. The 2100 comes "APRS-Ready," requiring only direct cable connection to a TNC (cable not provided).
- The second serial data port is in the 2100's sensor junction box, delivering greater flexibility in the location and connection of the Weather Picture, PC Weather Data Logger or other peripheral weather accessory.
- An exclusive Triple-Bank Memory System stores highest and lowest readings – today's, yesterday's and long term – and the date and time that every high and low occurred.
- Each long term high and low can be reset individually or you can use a Master Reset to clear all long term memories simultaneously.
- The system includes built-in static electricity discharge protection for all outdoor sensors. Also includes a 3 prong grounded AC adapter.
- Features a unique Rain Rate Alarm serving as a flash flood alert. It is compatible with all of our optional rain gauge models.
- The 2100 has a full array of adjustable alarms and an optional electrical external alarm output. A predictive battery test circuit warns when the battery is getting weak.
- Optional sensors include humidity sensors and rain gauges.



Ultimeter 800

HRO Price $279.95

The Ultimeter 800 has nearly all the features of the Ultimeter 2000 except the barometer. It has wind speed, wind direction, outdoor temperature, indoor temperature, wind chill temperature, time, date, automatic leap year adjustment and automatic scan mode as standard functions. With optional sensors, rain, outdoor humidity, indoor humidity and dew point reading are available. It automatically stores today's and yesterday's highs, lows and total rain fall. It also stores long term highs and lows. Alarms are provided for high wind, high and low outdoor temperature, high and low indoor temperature. The serial port has three output modes.



(Shown with optional displays)

Weather Picture

HRO Price $169.95

(aluminum version)

The Weather Picture receives data from an Ultimeter and continuously displays your preselected data. The 8 inch compass rose and big 0.8 inch illuminated red numerals are clearly visible day or night. View even from across the room.

Ultimeter 100

HRO Price $199.95

The Ultimeter 100 automatically stores today's and yesterday's highs, lows and total rainfall so you can compare the readings. Also stores long term high, low and rain information since it was last reset. Has a 3-mode serial port for interfacing telephone, modem or radio reporting.

Catalog Prices

HRO discount prices shown are current as of March 1, 2005, when this catalog was assembled.

Prices change both up and down. Please be sure to call one of our toll-free numbers or check our Web page for the latest prices.

We at HRO strive to offer the most competitive prices in the industry on a full line of quality ham radio products.

Many manufacturers offer "coupons" or similar promotions. Call or check our Secure Web Page at http://www.hamradio.com for the latest manufacturer promotions.

General Information for Our Valued Customers

Easy Ordering

Six toll-free 800 numbers are available for orders. They are located throughout the United States. This provides personnel at one location or another to answer your questions for extended hours Monday through Saturday. You will find the same low prices at all locations and, thanks to computers, we have the stock levels of all locations available to each salesperson for estimates of availability and delivery.

24 Hour "On-Line" Ordering is now available on the INTERNET! URL is *http://www.hamradio.com*

Shipments are made from any of our 12 locations that has the particular items you need in stock. In most cases, the shipment will be made from the location nearest you (if stock is available). HRO is trying to provide the quickest shipments in the industry using these methods.

California customers can now order using a toll-free number. The number is 1-800-854-6046. It is no longer necessary for California customers to pay for the phone call.

Sales Tax

State and local laws require us to collect and remit State sales / use tax on orders shipped from any of our 12 locations INTO Arizona, California, Colorado, Georgia, or Virginia.

You will find that this small extra charge will be more than overcome by the convenience of the largest ham radio inventories in the United States. You will also find courteous and knowledgeable salespeople to assist you. We think you will find HRO to be the company you want backing you when it comes to dealing with any problems you might have with manufacturers or shipping companies.

Phone Orders

To place a phone order using a credit card, please have the following information available if you are a first-time caller or have not made a recent purchase from HRO. We will ask for your callsign (if any), credit card number, expiration date, your home telephone number, and possibly the name, address, and telephone number of the bank listed on your charge card statement.

Payment

We accept Visa, MasterCard, American Express, and Discover Card. Personal checks are also accepted; however, processing time will delay shipment by some 10 days. When using a credit card, please have the card in front of you since we will need all the information, including the name of the issuing bank. If the card holder's BILLING address differs from the shipping address, please be sure to specify both addresses and telephone numbers. For your protection, we thoroughly investigate the validity of all credit card purchases.

COD Orders

COD payments must be made in cashiers check or money order at the time of delivery. There is a small fee for COD shipments.

Commercial Sales Purchase Orders

Written purchase orders will be accepted from city, state, and federal agencies, and, with prior approval of credit, from commercial organizations. HRO quotes, in most cases, prices that require payment on receipt of merchandise. You may find a surcharge for credit terms applied to your pricing. Please indicate that you require terms when calling for price quotes.

Delivery

Free UPS Ground Transportation in the continental US on most items over $100.

All Alaska and Hawaii shipments via UPS must be shipped by Blue Label (2nd Day Air) or Red Label (Overnight). Please ask for charges.

In a Hurry? If necessary to expedite shipments, UPS has Red Label (overnight), Blue Label (2nd-day) and Orange Label (3 day) services available at an extra cost. Please request charges for these services.

Foreign Deliveries We ship world-wide. Contact our stores, preferably by fax, with your needs. We can give you quotes and details for placing your foreign order. Payment methods include wire transfer direct to our bank as well as payment by VISA/ MC charge cards or check drawn in U.S. Funds from a U.S. Bank. Shipments are made (depending on size) by UPS, FED EX, Emery, DHL, or international air mail. Some orders to some foreign countries cannot be insured to the full value.

Truck Delivery On day of delivery, if by truck, please be sure to have enough help, and / or proper equipment on hand for unloading merchandise. Truck drivers are NOT required to provide assistance. If you are not experienced at handling large, awkward items such as towers, antennas or amplifiers, please ask properly trained people to assist you.

Canadian Orders can now be shipped via UPS. These costs will be added to your invoice.

Damaged Items

UPS If the item is obviously damaged, note this with the driver and refuse shipment. This item will be returned to HRO and another will be sent at no additional charge. If hidden damage is noted, contact UPS as soon as possible. They will arrange pickup. Once the item is received by HRO, a replacement will be sent.

TRUCK If there is damage or the shipment is short, it is the customer's responsibility to file the claim with the trucking company. At the time of receipt of item, it is recommended that you have the driver write "damaged" or indicate shortage on the bill of lading he gives to you. Be sure to have the same notation as well as drivers signature on his copy also.

MAIL It is the customer's responsibility to file all loss or damage claims with the postal department.

Prices

Many prices shown are suggested list price. In most cases we offer large discounts. Equipment manufacturers constantly change prices, offer specials or react to the Dollar / Yen exchange rates. Simply call one of our 800 numbers and our staff will be happy to quote you the current selling price of the item you are interested in. Prices are subject to change without notice or obligation to the customer. Sorry, we cannot honor typos in this catalog.

Software

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

Lost Items

When your order is delivered, please carefully count items and if anything is missing, notify HRO at once.

Occasionally, cartons shipped at the same time will arrive at their destination two or three days apart.

If you notify HRO within 10 days, we will replace lost or damaged items after completion of proper documentation and acceptance by the shipping agency.

New Equipment Returns

Products are not sold for evaluation. Under some circumstances (at the discretion of HRO) and with prior approval of the store of purchase, HRO will accept an item for return. Under most circumstances a 15% restocking fee and all freight charges will be assessed.

Your means of refund for returns will be the same as that used for your original payment except for cash, which will be refunded by check. HRO will pay from its corporate offices. It can take up to two weeks.

Defective merchandise may be returned within 10 days of the original purchase for exchange. Original receipt must accompany the return. Items returned for warranty replacement consideration must also include a completed, signed, "Warranty Replacement Certification Form." Customers who return equipment for replacement consideration without this form completed and signed cannot be considered for any possible warranty replacement, only warranty repair. No exceptions. Contact your salesman for details.

Manufacturer's New Equipment Warranties

Ham Radio Outlet supports all manufacturers' warranties. Actual warranty terms are included within the shipping container of most items. If needed, you may request from any of our locations a free copy of the manufacturer's written terms for any warranteed product. Please request by model number and indicate the page in this catalog that represents the product.

Ham Radio Outlet will in many cases provide in-store repairs; please contact the store of purchase for information. It will be necessary to provide us with the invoice number and purchase date, as most manufacturers need this information to process under their FREE warranty repair terms.

New Equipment Warranty Returns

When returning equipment for repair, please pack the item in original packing material or something similar to provide adequate protection during the shipping process. Note on box: "ATTENTION SERVICE." Include a copy of your purchase invoice, and a complete and detailed description of the problems. Without the invoice or a complete description, delays will be experienced in providing the proper service and returning the item to you. Be sure to insure the package for its replacement cost.

HRO will repair or replace the defective item at our option. If the item is found to be defective under the terms of the manufacturer's warranty, no charge will be made for service or return shipping within continental USA. It is the customer's responsibility to ship all defective items to the service center for warranty repair.

Problems

HRO prides itself in its ability to service the customer. If there is a problem please contact the manager of the store from which you purchased the merchandise. If for some reason, your problem cannot be corrected by that store manager, please feel free to call Ham Radio Outlet Corporate Headquarters at (925) 831-1771 and explain the situation. At this point our national sales staff will see that your problem is corrected.

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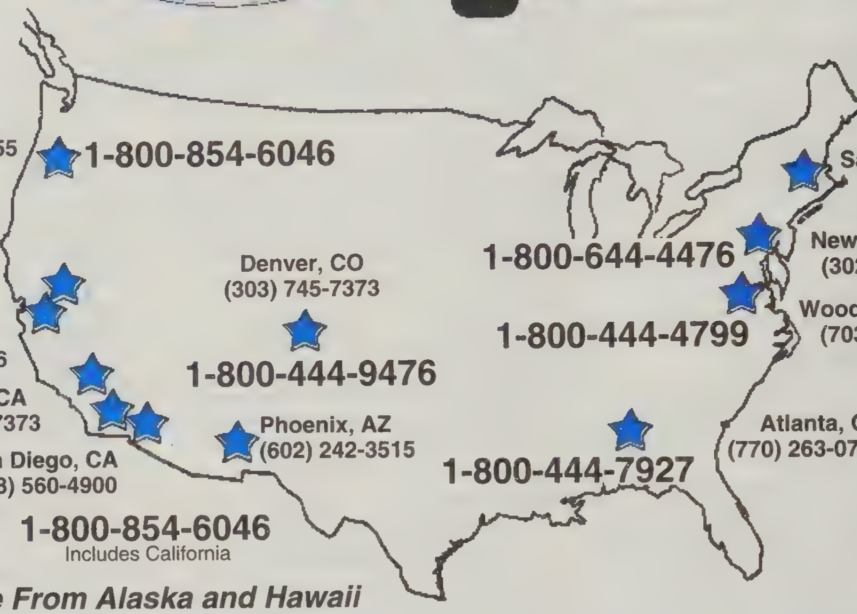

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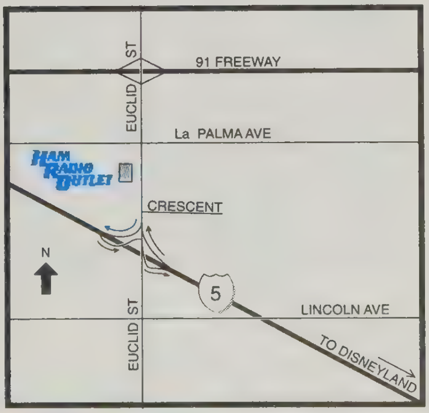
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5
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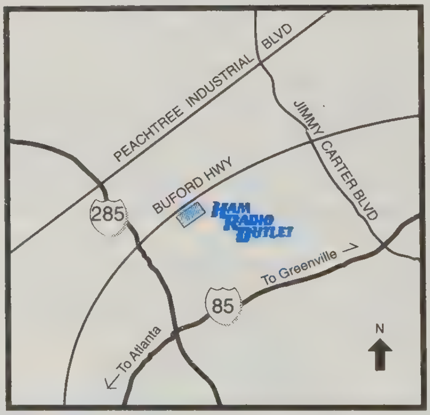
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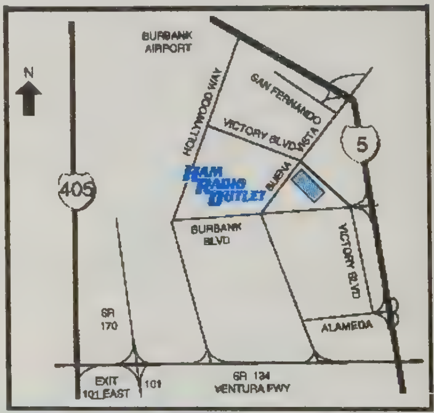
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405
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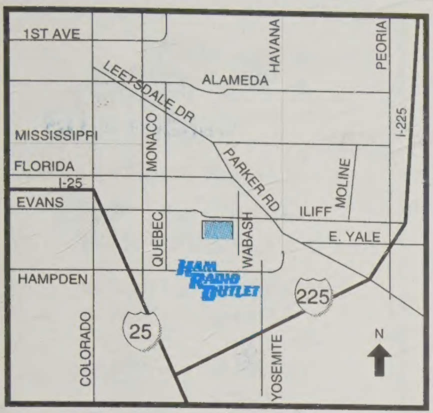
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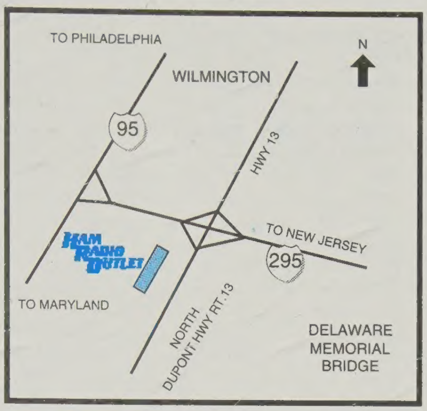
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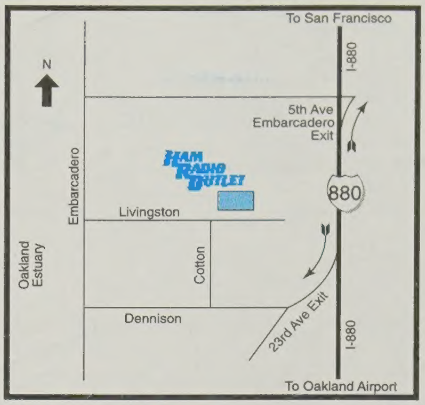
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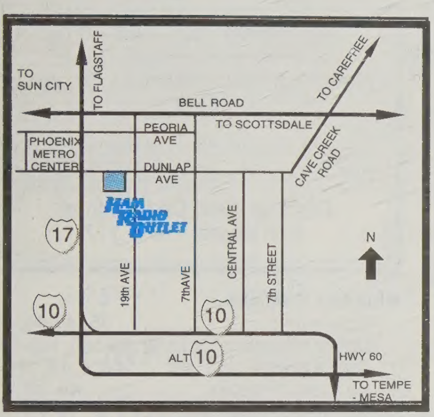
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TO FLAGSTAFF
TO CAREFREE
BELL ROAD
PEORIA AVE
TO SCOTTSDALE
PHOENIX METRO CENTER
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19th AVE
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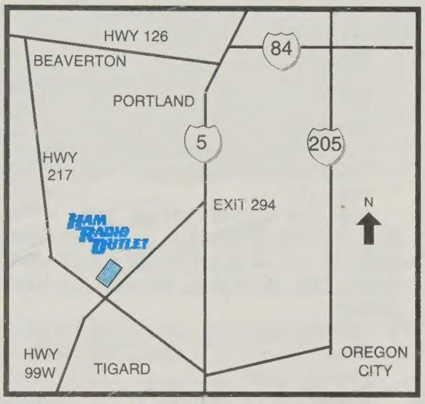
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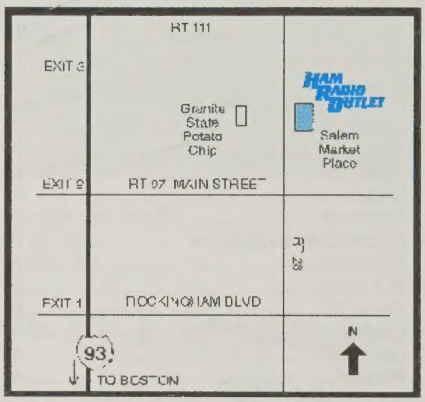
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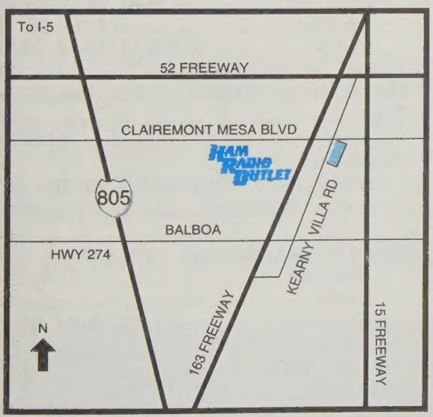
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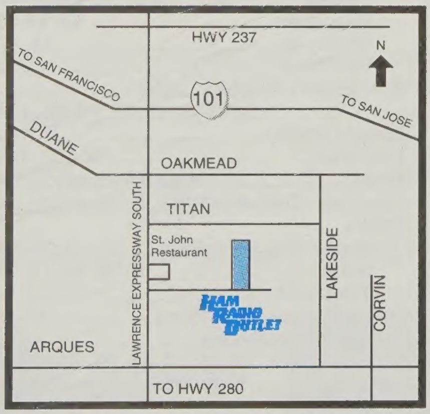
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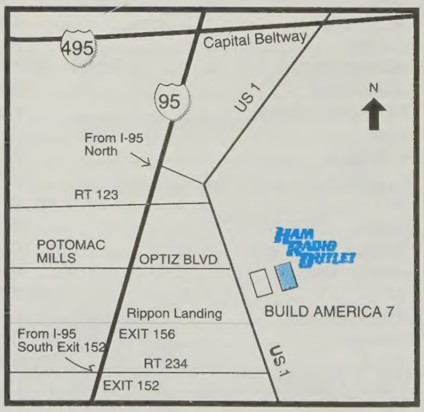
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